The Lumleian Lectures

ON

BRONCHITIS, PULMONARY EMPHYSEMA, AND ASTHMA.

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LECTURE II.[1]

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On the Nature of Pulmonary Emphysema.

Mr. President and Gentlemen,—In 1764 Dr. William Watson (who afterwards became a Fellow of our College and a knight) read before the Royal Society "An account of what appeared on opening the body of an asthmatic person." He described what he called an "emphysematous state of the lungs," a condition which he deemed to be due to an "extravasation" of air into the lungs from the "bronchia and vesicular substance," and what was no doubt vesicular emphysema of the lungs in the sense which we give to that phrase. Pulmonary emphysema has been known in one of its results—namely, the barrel-shaped chest—from the time of the ancient Greeks. The lesion of the lungs themselves was first noted by Valsalva and Ruysch in the earlier part of the last century. However, Laennec was not far from the truth when in the first edition of his great work published in 1819 he said that "emphysema of the lungs, such as he had described it, seemed to him to be a disease hitherto unknown."

It is universally agreed that the note of pulmonary emphysema is to be found in enlarged capacity of the acini and lobules of the lungs beyond what can be produced in health by the deepest inspiration. This change in the structure of the lung, the anatomical characteristic of emphysema, is pretty thoroughly known; but when we come to inquire into the process which leads to emphysema the case is very different. For we cannot know the process in the same way as we know the result; we cannot watch the lungs becoming emphysematous; we can only argue about the process. Deprived of the intuition of sense, the light of nature, we must follow the light of reason and beware lest it prove to be *ignis fatuus*. And unfortunately we can get no help from experimental pathology; we cannot set up progressive emphysema in the lower animals and mark its stages in the same manner as we can set up inflammation. Hence the many theories of emphysema and long discussions which, however, do not dishearten me from attempting the difficult topic once more; my only fear is lest I should weary you.

Acute Emphysema.

The emphysematous process, like all nature's processes, may be assumed to be complex, and we shall do well to begin by endeavouring to resolve it into its simplest elements. Nature itself helps us much by offering to our consideration a form of emphysema which certainly is simpler than ordinary emphysema and which seems to consist in a mere over-distension of the lung. I allude to the acute emphysema first adequately described by Fauvel in his essay upon capillary bronchitis. You know the condition—both lungs distended with air, as if insufflated by the fullest possible inspiration, but some parts of the lung distended more than this, emphysematous, in short, and especially so in the upper lobes and their anterior portions. You know that this acute emphysema is especially met with in young children who have died from suffocating capillary bronchitis or from diphtheritic croup. Many of these children will have enjoyed the most perfect health until they are attacked by the bronchitis or croup, so that there is no question in them of any preceding disease of the lungs. The suffocating bronchitis will often prove fatal within a week from its beginning; croup will kill in a still shorter time, and there is a disease, very much less common—namely, hæmorrhage into the air passages—which may suffocate in a few minutes, acute emphysema being found post mortem in all cases.

Let us turn our attention to croup in the first place, inasmuch as it is often entirely free from one condition which might complicate the question—namely, collapse of the lung. For although fatal croup is usually associated with abundant puriform secretion into the small air-tubes of the lungs, yet in spite of this form of bronchitis there is sometimes no collapse at all even when the lungs have become highly emphysematous, so that collapse, when present, can be no more than somewhat contributory to the emphysema. In other words, the emphysema is but slightly, if at all, compensatory to any collapse. John Cheyne, in his book on the pathology of the laryngeal and bronchial mucous membrane published in 1809, frequently alludes to the emphysema and puriform catarrh of croup. For example, he says: "The lungs were so filled that they did not recede in the least when the thorax was opened; every surface which was cut poured out this puriform fluid from several points."

Setting collapse aside, the conceivable causes of acute emphysema are two—namely, dyspnœa and cough; that is to say, the movements of dyspnœa and of cough, not overlooking the fact that they usually concur. Here also the question is simpler in the case of croup. In capillary bronchitis both dyspnœa and cough are great and therefore the question of the associated emphysema is complicated. But in croup the dyspnœa is extreme, while the cough is insignificant or even absent, so that it may be left out of consideration, and all this in cases affording a high degree of insufflation and emphysema of the lungs.

Our analysis thus leads us to infer that dyspnœa is the cause of acute emphysema. Now, the movements of dyspnœa are forced movements, inspiratory or expiratory, or both. But before proceeding further with this part of our subject let us cast a short glance upon the movements of breathing in general.

From the earliest times the diaphragm has been regarded as the essential agent of respiration. We may say of respiration, and not of inspiration only, because expiration is little more than a result of inspiration. Galen was the first to show that most of the intercostal muscles were ordinary muscles of inspiration. Guided by the researches of Duchenne we may disregard the exceptions which Galen made and we may say that all the intercostals act simultaneously and are employed in ordinary quiet inspiration. They not only raise the ribs but keep the intercostal spaces tight during the descent of the diaphragm. When the intercostal muscles are paralysed but the diaphragm is not, the upper two-thirds of the chest are motionless.

The chest may be roughly compared to a bow, inspiration to a bow when pulled upon by an archer, and expiration is little more than the elastic recoil of the bow when the archer lets go the string. But the inspiratory muscles do not altogether let go when expiration begins, they continue to act as moderators of the expiratory movements, and hence expiration is more gradual than it would be were it a mere elastic recoil. In short, the muscular contractions of expiration are persisting contractions of inspiratory muscles unless the expiration be forced and then extraordinary muscles of expiration come into play.

Physiologists seem to be agreed that although the outward pressure of the air at the mouth during expiration is greater than the pressure inwards during inspiration, yet the forces concerned in inspiration are decidedly much greater than those of expiration. These propositions at first sight seem to be discrepant, but we are not called upon here to explain the apparent discrepancy—we will only remark that they indicate a provision in the human economy for repressing the greater powers of inspiration. Let us especially note that the elastic retraction of healthy lung is not satisfied by the deepest expiration and that the lungs are provided with a considerable reserve of elasticity, so necessary is it to maintain sufficient deflation of the lungs, or in other words to keep them sufficiently empty of air. For if there be insufficient efflation there must be insufficient inflation.

In the forced breathing of healthy persons there is the same disproportion between the powers of the antagonist movements. But physiological experiments relate to a few forced respirations studied in a healthy subject. The forced breathing of disease introduces a new set of conditions and requires that we proceed to an analysis. The extraordinary muscles of inspiration are chiefly three: the sterno-mastoids, the scaleni, and the upper third of the trapezii. These

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muscles can be seen contracting during inspiratory dyspnœa. Other muscles there are which assist to some degree but to enumerate them is not necessary. These extraordinary muscles act by raising the upper part of the chest and fixing it so as to enable the ordinary muscles of inspiration to act with extraordinary power. The fixity of the clavicles and first ribs enables the intercostals to contract with their greatest power and to elongate the chest in a direction upwards at the same time that the diaphragm elongates it downwards. Observation of the living patient shows us that forced inspiration tells chiefly upon the front part of the thorax above Harrison's furrow.

The extraordinary muscles of expiration affect quite another part of the chest. In a patient coughing violently we see the muscles of the abdominal walls, especially the recti, contracting so as to straighten and depress the front part of the chest below Harrison's furrow. The diaphragm being relaxed is necessarily driven upwards. If the largest air-tubes be obstructed by mucus or by partial closure of the glottis (as in the case supposed of coughing) it is very instructive to see how forced expiration dilates exactly the same part of the chest as that which is dilated by forced inspiration. Hence in diseases attended by cough or dyspnœa the unfortunate upper and front part of the thorax has no chance—forced inspiration and forced expiration combine to keep it distended. Nature provides that the result of ordinary inspiration shall be fully countervailed by expiration; nature provides extraordinary muscles to reduce the distension of the lower part of the chest caused by forced contraction of the diaphragm, but nature provides no extraordinary means by which the injurious effects of forced inspiration upon the upper part of the chest can be repaired by forced expiration. On the contrary, both movements concur to the same end, or, in other words, no muscular contractions can reduce over-distension of the upper chest, and if the inherent elasticity of the lungs and ribs cannot reduce it nothing can.

Before leaving this topic let us repeat that we must be careful to distinguish between the voluntary forced breathing of a healthy person and the involuntary, instinctive, automatic forced breathing which attends dyspnœa. Voluntary excessive movements soon fatigue, but automatic breathing is not attended by a feeling of fatigue, and so the extraordinary movements of dyspnœa can be continuously kept up for hours, days, or weeks—may we not say, indeed, for months or years? Moreover, let us note that this remark applies to the movements of breathing only, but by no means to those of cough—cough must be intermitting.

We will now return to the consideration of the acute emphysema of croup. In the living patient a very few hours of dyspnœa suffice to produce a marked bulging on the front of the chest above Harrison's sulcus. After the patient's death we find that the corresponding part of lung is the seat of a high degree of emphysema. The whole lungs are insufflated or distended with air, but nowhere is the emphysema so marked as in the situation just indicated. This is the very part of the chest which is most expanded by forced inspiration and which is expanded by forced expiration also in the case of cough, but expanded, let us note, by a different mechanism in the two cases. In deep inspiration this part of the chest-wall is expanded in the first instance and the expansion of lung follows, whereas in forced expiration and in cough this part of lung is expanded in the first instance and it drives the chest-wall outwards. It will be hardly necessary here to recall to your memory the mechanism by which cough produces emphysema according to the doctrine elaborated by our former distinguished President, Sir William Jenner. The glottis is closed in preparation for a cough or for any great effort. Forcible expiration follows; certain parts of lung are compressed from which air escapes, but not being able to pass the glottis it is driven into those parts of lung which are not compressed, especially the upper anterior parts so often mentioned. Expiration under these conditions can doubtless produce emphysema in certain places, but in the case of croup inspiration is by far the more potent agent, being incessant in its operation, whereas cough is only occasional and sometimes there is no cough at all. Moreover, forced expiration cannot explain the highly insufflated state of the whole of both lungs, for the distension caused by expiration must be partial.

We are yet far from having reached a full understanding of the mechanics of acute emphysema. We have arrived at an extraordinary expansion of part of the lungs, but the essential cause of the expansion lies deeper than this. You will understand what I mean when I ask this question, Why does the expansion remain permanent? And I think that from what has gone before the answer will readily come, Because nature has omitted to provide the thorax with muscles by means of which this acute emphysema could be prevented or overcome. The only means which nature *has* provided towards this end is the elasticity of the lungs and ribs, especially of the lungs, and this means, unfortunately, is inadequate. It is vain to object that physiological experiments prove forced expiration to be more powerful than forced inspiration, because these experiments deal only with the lungs as a whole and cannot tell us anything about the respiratory powers of different parts of the lungs which is the very thing we want to know. Can it be thought for a moment that the expiratory power of the upper part of the chest is greater than the inspiratory? Certainly not.

The elasticity of the lungs, then, falls sadly short of what is required of it during an emergency of dyspnœa. How is this? Either the elasticity is defective absolutely or it is defective only in respect of the increased demand made upon it, and probably both conditions concur; that is to say, the elasticity is called upon to do more than usual at the very time when itself is weakened and able to do less. In the first place, this unusual demand upon the pulmonary elastic recoil is due to the abnormal secretions in the air-passages, and the expired air has to overcome the resistance of these secretions in addition to what is the only obstacle to expiration met with in health—namely the atmospheric pressure. The elasticity has too small a reserve; it is equal to overcome the atmospheric pressure, but not much more. Inspiration, being the more important motor of the upper lung, can draw air past the obstructing secretions, of which air expiration can expel only a portion, and thus much air comes to be imprisoned in the parts which are, or which become, emphysematous. In the second place, the elasticity of the lung is probably damaged. We have already compared normal inspiration to drawing a bow, and it does not seem a very far-fetched similitude to compare the result of an enormous number of forced inspirations to a bow which has been overdrawn, bent, and crippled. The elastic recoil of the lungs is weakened. So far as I know no careful microscopic examination of the pulmonary tissues in acute emphysema has ever been made.

And now to sum up the conclusions at which we have arrived. The feeble expiratory power of certain portions of the chest is a condition which predisposes the underlying portions of lung to suffer from acute emphysema in cases of croup. Given this predisposition the aforesaid portions of lung become over-distended in consequence of forced inspiration or of forced expiration, or of both.

I have purposely avoided interrupting the chain of reasoning by allusion to the opinions of others, for it seems to me that the argument stands in no need of any such support, whilst as to opinions which are more or less contrary I hope you will agree with me that the limited time allotted to these lectures can be better spent than by engaging in polemics.

The acute emphysema of suffocating bronchitis will now be easily understood. This affection is referred to by Aurelian in his chapter upon peri-pneumonia, where he says that as the disease gets worse the chest becomes more protuberant. The causes of the emphysema are the same as in croup, but with this addition—that in peri-pneumonic catarrh more or less collapse of the lung is common and tends to aggravate the distension of the rest of the lung, according to the mechanism explained by Sir W. T. Gairdner.

CHRONIC EMPHYSEMA.

Acute emphysema is a condition which often ends in complete recovery. Chronic emphysema, on the contrary, is a progressive disease. Although it was first adequately described by Laennec it had engaged the attention of physicians long before his day, not, however, as a lesion found upon the post-mortem table, but as a disease of the living subject. Being looked at merely from the clinical point of view emphysema was usually called asthma; for example, Heberden, speaking of what must have been chronic bronchitis and emphysema, says: "When a constant cough has afflicted people in youth and adult life, in their old age they become asthmatic."

Laennec tells us that there was a time when he thought emphysema to be a very rare disease, but that afterwards he became convinced that it is common enough. Virchow supplies figures intended to show that emphysema is not

common. In 10 years only 0·3 per cent. of all patients admitted into the Charité Hospital of Berlin were admitted on account of emphysema; in only 0·6 to 0·7 per cent. of the bodies examined post mortem was emphysema the chief lesion found, and in only 5·5 per cent. was there any emphysema at all. The statistics of St. Bartholomew's Hospital yield these figures: in four years (1894–1897) 9928 patients were admitted into the medical wards; 165 or 1·66 per cent. were believed to be emphysematous; 1363 post-mortem examinations were made and emphysema was found in 154 bodies, or in 11·3 per cent. Our figures justify Laennec's opinion; a lesion found in 11 per cent. of persons dying in the medical wards of a hospital cannot be called uncommon.

The anatomical sign of chronic emphysema consists in actual loss or atrophy of the lung tissues, yet many pathologists of the first rank have expressed a different opinion—namely, that there is a hypertrophy of lung tissue, either a hypertrophy preceding the atrophy or a local hypertrophy simultaneous with local atrophy. Laennec himself thought it highly probable that emphysema is usually accompanied by a certain degree of hypertrophy, finding that the lung feels firmer and less flexible when pinched between the fingers. Yet he recognised the associated destruction of tissue, as indeed such a man could not help doing when he examined emphysematous lungs in the manner which he recommends—namely, by inflating and drying them. Laennec's contemporary, Louis, was less sagacious: he admits no exception to his universal affirmation that emphysema implies increase or hypertrophy of lung tissue. When we ask how Louis detected the pulmonary hypertrophy we get no clear information: he seems to have done no more than adopt Laennec's methods and to have examined the lung by pinching it and by drying it. These doctrines are not altogether incorrect, only we must express them a little more precisely. In the first place, emphysema in its earlier stages does not affect the whole lung or does not affect it equally. And next, the great and extensive atrophy of tissue cannot be gainsaid in the case of emphysema in its later stages, the lungs being examined according to Laennec's method; they feel, as he says, no longer firm and inflexible, but soft and downy and the loss of tissue is most obvious to the eye. Induration is a better name than hypertrophy to give to the abnormal firmness and rigidity of the alveolar walls, and this induration is always very partial and found only in the earlier stage of the disease.

The microscope has not yet disclosed any primitive tissue changes apart from mere atrophy, if such changes there be; and I need not refer to hypotheses such as that of Rainey who deemed the primary lesion of emphysema to consist in fatty degeneration of the alveolar walls, or that of Villemin who described a sort of granulation of the connective tissue which supports the capillary network of the lungs, for in all probability what both these anatomists saw were degenerative changes in the epithelium—changes secondary to a preceding failure of nutrition, whatever the nature or cause of that failure may be. Other pathologists have supposed a primary affection of the capillary blood-vessels or of the unstriped muscular fibres or of the epithelium, but the truth is that the earliest changes are very imperfectly known.

We are thus led on to survey the great field of strife in the topic of chronic emphysema. There is rarefaction of lung and there is destruction of lung. Does one cause the other? and if so how? And this is not all; we desire to look deeper still and we ask how the primary defect, whether it be rarefaction or destruction, is brought about—To what is it due? In other words, What is the essence of emphysema? We wish if possible to witness emphysema in the making, and inasmuch as morbid anatomy can show us no more than the final result I invite you to discuss the subject with me from the clinical point of view.

First, we will inquire what means we have for discovering the existence of emphysema in the living subject, and we are met at the outset by the fact that most of these patients suffer from manifest bronchitis also. These complex cases are not suitable for our present purpose; we cannot disentangle the symptoms of the two diseases so as to be able to say, this is due to emphysema and this to bronchitis, whilst as to the physical signs of emphysema there are none, excepting in advanced cases which are always complicated with bronchitis. If we require instances of emphysema quite unattended by catarrh such instances are not to be found. However, let us consider a case of marked progressive emphysema in which the indications of bronchitis and catarrh are the least possible. A man about middle life begins to suffer from slight shortness of breath on exertion; he is short of breath—that is to say, the patient feels that he cannot inspire so much breath as he seems to need, in a sense like that in which we say that a man is short of money. His breathlessness increases slowly and insidiously until his breath is always short, but no signs of dyspnœa, no laborious or extraordinary movements of respiration, are apparent so long as he is at rest, not until he makes some effort, such as that of talking or moving the body. In cases still worse dyspnœa persists even when the patient is at rest. The dyspnœa of emphysema, like most other kinds of permanent dyspnœa, is liable to paroxysms in which the shortness of breath becomes very distressing. These paroxysms are induced by any effort, such as hurrying, or even no more than straining at stool, raising the foot to enter a carriage, or lifting the arm to shave. A paroxysm will sometimes occur during sleep and will suddenly awaken the patient or will sometimes occur just as he is falling off to sleep. The mere taking of food may be enough to provoke an attack; so will any sudden change in the temperature of the air breathed such as occurs on leaving a hot room. The paroxysm is sometimes very sudden and severe, and the patient's description of it sounds very much like that of an attack of angina pectoris—indeed, the heart probably does participate, for I have known a pulse which was habitually about 80 fall to 60 or 70 during the paroxysm.

Now suppose a patient suffering from progressive dyspnœa of this kind and from no other symptoms, no cough, no expectoration; and suppose we find by examining his chest that his lungs are enlarged or, in other words, that he presents the physical signs of emphysema, we might well ask whether he were not the subject of protopathic emphysema. And some physicians say that they have met with such patients and that therefore they believe in the occurrence of emphysema, pure and simple and uncomplicated. I cannot say that this has been my experience. I have never known this progressive dyspnœa and emphysema to be unattended by cough and expectoration.

The cough is a tickling cough (tussis titillatoria) brought on by a troublesome sensation referred to the larynx. A person affected in this manner and who, in the spirit of the age, diagnosticates the nature of his own disease goes to a specialist who snips off the tip of his uvula or discovers an irritable spot in the larynx but fails to afford relief. The cough like the dyspnœa steals insidiously upon the patient until in the course of years he becomes liable to fits of coughing which are very severe, during which he becomes purple in the face and sometimes even suffers from giddiness—giddiness which is in any degree of intensity, from an attack so slight that the man declares that he has retained his sensibility throughout to an attack which amounts to total loss of consciousness, in which latter case the patient sinks to the ground and sometimes hurts himself in his fall, but even at its worst the coma does not last more than two or three minutes. The expectoration which attends the cough is very scanty and consists of pure mucus. Or it may be that there is no expectoration at all, or, at any rate, no exspuition.

Aretæus describes a class of persons whom he designates "pneumodes," a word which Stephanus interprets to mean *pulmonis vitio laborantes* or *pulmonarii* and which seems to have the same meaning as the French word *poitrinaires*. Now, if it were not for one particular in Aretæus's picture of the disease we could not doubt that his "pneumodes" were cases of progressive emphysema. The disease, he says, is a kind of asthma and there is little difference in the symptoms of the two diseases; all patients labour under shortness of breath as in asthma, but they have this as peculiar, that they cough as if about to expectorate, but their effort is vain for they bring up nothing; or if anything is forcibly raised from the lungs it is a small, white, round substance resembling a hailstone. The thorax is broader than natural but not altered in shape; the lungs, though free from suppuration, are filled with humours; in some cases the affection terminates in dropsy about the lungs or in anasarca. But the pneumodic disease proves fatal within a year from its onset, and this is so grave an objection to our supposing that Aretæus was referring to cases of pulmonary emphysema that I should not have alluded to his description were it not for the peculiar sputum which he depicts and which possesses the same characters as those of the sputum expectorated in the affection which Laennec denominated "catarrhe sec."

All physicians admit a close connexion of some kind between bronchitis and emphysema—a connexion in many cases so obvious as to be past all doubt, but in other cases not so. Laennec went so far as to say that emphysema is almost always the result of intense and extensive *catarrhe sec*. All writers on emphysema mention this opinion of Laennec; few, if any, adopt it or even discuss it, but no opinion of that remarkable man can be passed over lightly. What does he mean by dry catarrh? He himself admits that the phrase is a contradiction in terms; to find appropriate names for diseases was not a strong point of his; witness his perversion of the meaning of the word "apoplexy" in his phrase, "pulmonary apoplexy." But medical writings are full of this fault, and Laennec is no worse than many other physicians. A better name than dry catarrh would be dry bronchitis *(bronchitis sicca)*, for the word "siccus" as applied to pulmonary diseases denotes scantiness or absence of expectoration. Stoll speaks of "pleuritis sicca" and "pleuritis humida"; Hippocrates of "dry orthopnœa," and the phrases "dry cough" and "dry asthma" are colloquial.

In the lungs of persons who died in an early stage of dry catarrh Laennec used to find the mucous membrane of the bronchia swollen and dull-red or violet in colour—conditions most notable in the smaller bronchia, which might be almost completely obstructed by the swelling. The extent of the swelling was not more than a few lines, the mucous membrane in the same tube above and below being natural. This local bronchitis was extensive in proportion to the duration of the disease. When the dry catarrh was universal or even very extensive it always ended by determining emphysema. He often found the partially obstructed tubes to be plugged by pellets of viscid mucus of the size of hemp or millet seeds, and it is these mucous pellets which make up the pearly sputa which such patients, even when they think there is little or nothing the matter with them, expectorate in small quantity every morning.

During life the dry catarrh often continues to a slight degree for many years, Laennec goes on to say, or it may be altogether latent, the patient noticing no more than that his breath is shorter than that of other men, especially upon exertion. This dyspnœa increases gradually and the patient becomes subject to attacks bad enough to deserve the name of asthma. The tendency to dyspnœa is accompanied by cough which at the beginning of the disease is, like the dyspnœa, slight. The cough is attended by expectoration of what Laennec calls pearly sputa, which closely resemble the hailstone sputa (*chalazia*) described by Aretæus and Galen. Such is a brief summary of Laennec's characterisation of his *catarrhe sec*.

Now, if we admit that a man in a state of perfect health ought not to cough or expectorate, and also that expectoration implies catarrh, it follows that at no period of the progress of emphysema is that condition unassociated with catarrh. Again, inasmuch as emphysematous patients always become in the advanced stage of their disease manifestly bronchitic or catarrhal, it is reasonable to believe that in the early stage also their cough and expectoration indicate slight bronchitis or catarrh. Lastly, the symptoms of progressive emphysema (as I have already attempted to depict them) and those of Laennec's dry catarrh seem to relate to the same disease looked at from two different points of view.

We have now reached a position which enables us to resume our discussion of the nature of emphysema. Starting from the note of progressive emphysema—namely, the atrophy of lung tissue—the problem may be resolved into a choice between these alternatives. Is there a primary degeneration of lung tissue, rendering it apt to be permanently distended and also to be destroyed particle by particle? Or is the atrophy due to distension of the lung, and if so, what causes the distension? In briefer language, is the atrophy primary or secondary? The easiest answer is that which assumes the atrophy to be secondary to distension. Laennec asserts that "pulmonary emphysema is almost always developed in consequence of intense and extensive dry catarrh," and we have seen that clinical observation supports this opinion. But in speaking of the priority of catarrh we must understand it only as a priority of order and conception and not as a priority of time. Another argument in favour of Laennec's opinion is this, that inasmuch as acute emphysema is undoubtedly dependent upon bronchial affections it is probable by analogical reasoning that chronic emphysema likewise is so. I will not repeat Laennec's explanation, which you all know, concerning the manner in which he supposes dry catarrh to lead to emphysema, and I will only remark that his hypothesis is not so easily set aside as some people think by pointing out that the air-current at the mouth of a healthy man is more powerful during expiration than during inspiration, for the conditions in pulmonary catarrh are obviously not the same.

Let us fix our attention upon the fact of the barrel-shaped chest in cases of emphysema. It is a chest more capacious than a healthy chest could be rendered by the deepest and most powerful inspiration. The distended chest is a sign of distended lungs, and this fact puts before us a disjunctive hypothesis: either the distended chest distends the lungs, or the distended lungs distend the chest. Now the latter hypothesis affords no explanation at all, because it leaves the distension of the lungs unexplained; and the cause of this pulmonary distension or emphysema is the very thing we are asking for. Wherefore let us consider the former hypothesis—namely, that the distension of the lungs is consequent upon increased capacity of the thorax. In normal inspiration which fact precedes the other—dilatation of the lungs or dilatation of the chest? And by what powers can the chest be over-distended? Obviously by the inspiratory muscles, ordinary and extraordinary, and by no others. And if the chest be over-distended, what must ensue? Over-distension of the lungs, because the potential vacuum caused by extraordinarily deep inspiration is certainly not filled up in any other way.

In health the inspiratory distension of the lungs is exactly countervailed by the expiratory contraction. Why, then, in the barrel-shaped chest is this no longer the case? Obviously because the expiratory powers have been unequal to the task of restoring the chest to its natural shape and size. That is to say, the expiratory powers are no longer equal to the inspiratory. And is not this a sufficient reply to those who, relying upon spirometrical observations made upon healthy people, reject Laennec's explanation of the mechanism of emphysema.

In emphysema, then, there is failure of expiratory power; nay, more, this is the essence of emphysema. Expiration being no longer able to rid the lungs of their exhausted air, ordinary inspiration cannot supply the necessary quantity of fresh air. And there is only one means by which the expiratory failure can be met, and that is by inspiratory movements extraordinary in power and amplitude. These extraordinary inspirations being repeated for weeks, months, and years the chest becomes permanently over-distended and hence the lungs become permanently over-distended and this is emphysema.

We have no clear and certain knowledge respecting the nature of the expiratory failure. We may conceive it to be absolute or relative. Absolute—that is to say, the elastic and muscular movements of expiration are weakened; relative—that is to say, the resistance which expiration has to overcome is increased. 1. The notion of an *absolute* debility of expiratory movement must relate to the elasticity of the lungs only, because there is no reason for supposing the elastic or muscular movements of the chest to be primarily weakened. And thus we are led back to the question of degeneration of lung tissue, either primary or secondary to other disease—an obscure topic which we will again defer for awhile. 2. But the notion of a *relative* debility of expiration is that which lies at the bottom of Laennec's doctrine, the resistance to expiration being increased by the presence of mucous plugs in the air-tubes and by swelling of the mucous membrane. True, reply his critics, but these obstructions are equally great for inspiration as for expiration, and thus we are again met by the question concerning the relative powers of inspiration and expiration—a question which is answered by reiteration of the fact that nature has provided us with very feeble means of reducing by forced expiration the distension of the chest and lungs produced by forced inspiration. The extraordinary muscles of expiration are inadequate, whilst as to the elastic tissues of the lung we may hazard the conjecture that if overstrained they do not easily recover, and it is only inspiration that can overstrain them.

Now, just to consider for a moment the question whether the over-distended chest can possibly be due to over-distended lungs. In other words, can we assume a primary over-distension of the lungs powerful enough to distend the whole thorax and to make it barrel-shaped? If so, what distends the lungs? Forced expiration is sufficient to distend certain portions of

lung which are unsupported by bone or muscle, such as are the apices. But more than this is inconceivable; it is inconceivable that expiration, how forcible soever, can produce a shape of chest which is identical with that produced by forcible inspiration. Again, a favourite seat of emphysema is the undermost surface of the lung where it lies upon the diaphragm; how can coughing—an act during which the diaphragm is driven powerfully upwards—over-distend this portion of lung? Surely it is the powerful inspiratory descent of the diaphragm which produces this effect; and let us remember that the forced expiration of persons coughing, of musicians, or of horses tugging up a hill is rendered possible only by a preceding forced inspiration. In short, we cannot understand the occurrence of a primary over-distension of the lungs sufficient to distend the thorax.

Now to discuss and finally to dismiss the question of the degenerative lung changes. In the first place, it is probable that the elasticity of the lungs is injured if the tissues be much or often overstretched, and any such loss of elasticity must tend to increase emphysema by weakening expiration. In the second place, it is very reasonable to believe that the anæmia, which is the visible and undoubted result of over-distension of any portion of the lung, will cause degeneration and atrophy of the tissues thus imperfectly supplied with blood. In the third place, it is possible that there is such a lesion as primary atrophy of lung, analogous to the atrophy and perforations which we often observe in the omentum, falx cerebri, and valves of the heart. In the fourth place, it is not unlikely that the form of pulmonary emphysema in which the total size of the lung is not increased, "atrophous emphysema," is an atrophy of the second or third kind. And, lastly, there are good grounds for believing that even ordinary progressive emphysema with enlarged lungs is from its very beginning an atrophic process, even although to the mind's eye the destruction be secondary to the distension.

To end our inquiry by recapitulating the results at which we have arrived, I submit to your judgment these propositions:—That pulmonary emphysema is chiefly due to forced inspirations, although forced expiration may to some small extent play its part. That the distension of the lung in so far as it is due to inspiration is secondary to distension of the chest. That the forced inspiration is rendered necessary by a feeling of dyspnœa. That the dyspnœa which occurs at the beginning of pulmonary emphysema and which determines it is consequent upon obstruction of the air passages. That in chronic progressive emphysema this obstruction depends upon bronchitis, either humid and attended with free secretion or dry with scanty secretion. That when once emphysema is set up the dyspnœa and the necessity for forced inspiration are increased by the natural defect of expiratory power in the lungs and in certain parts of the chest, nature having provided means insufficient for reducing excessive inspiratory distension to the normal and for thus emptying the lungs of residual air. That the degeneration and atrophy of lung tissue are usually dependent upon preceding over-distension, although it is possible that pulmonary atrophy may to some extent be primary.

Allow me to conclude by appropriating the words of the most ancient of the Greek philosophical poets—"These opinions have seemed to me to resemble the truth."

LECTURE III.

Delivered on March 23rd, 1899.

ON THE NATURE OF ASTHMA.

MR. PRESIDENT AND GENTLEMEN,—I propose to devote this day's lecture to a discussion of the nature of asthma. The topic you will, perhaps, consider to be almost exhausted. However, I invite you to the discussion because even if we cannot predicate all that asthma is, yet the time has come, I think, when we should finally dismiss certain opinions which have for two centuries impeded the attainment of clear notions upon the pathology of the disease.

Before proceeding to the argument it is desirable that we should come to an agreement as to the meaning of the word "asthma." It was used in a simple etymological sense until the time of our distinguished Fellow, Dr. Thomas Willis, in the middle of the seventeenth century. Asthma before his time denoted any kind of panting, gasping, pursy breathing such as follows upon running or exertion. Hence asthma and dyspnœa were synonymous for most of the older physicians. A few, such as Celsus, signified by asthma the highest degree of dyspnœa, but this was all; asthma was never regarded as a special sort of dyspnœa. In reading the writings of the ancients we must always bear this in mind and beware of importing into their generic use of the word the special meaning which it bears in modern times. Indeed, so far as my limited reading enables me to judge, I should say that what the ancient physicians have left us concerning asthma is of very little value. It is interesting to note that those most conservative of people, the illiterate, continue to use the word in the sense of Hippocrates and Galen.

Thomas Willis was the innovator upon the doctrine of the ancients. His opinions, in their mature form, are found in the second part of his Rational Pharmaceutic, published in 1675, after his death in the same year. He says, truly enough, that the ancient physicians and also most moderns up to his time had admitted only one kind of asthma, that which he calls pneumonic asthma and which had always been deemed to be the result of the air passages of the lungs being obstructed or not open enough. It would be a more accurate expression to say that the ancients regarded all cases of asthma as pneumonic and dependent upon bronchial obstruction. From this pneumonic asthma Willis distinguishes a second kind which he calls convulsive asthma, the primary fault being in the motive organs of the lungs, to wit, in the moving fibres or muscular coats of the air vessels or in the diaphragm and muscles of the chest or in the nerves of the lungs and chest or in the origin of those nerves in the brain. There is also, he says, a mixed asthma, both pneumonic and convulsive, and inveterate asthma is usually of this kind.

You will observe that Willis's doctrine is very comprehensive and that he vaguely anticipates all the theories of asthma which have been propounded since his day. His new notion of convulsive asthma was soon laid hold of; the term "asthma" came to be reserved for the exclusive denomination of that form of the disease which was believed to be spasmodic; and this is the sense in which the word is still used by most persons even in our own day. Willis's influence upon this question of pathology has been so great that the present lecture is to a large extent an endeavour to determine whether he was the discoverer of an important truth or the parent of a delusion. A satisfactory definition of the word "asthma" will be the end of our discussion, if we succeed in attaining a clear and distinct notion of the nature of the disease, for, as Milton, writing in the spirit of both Plato and Aristotle, says: "Definition is decreed by logicians to consist only of causes constituting the essence of a thing." But meanwhile we may perhaps be able to agree upon a sort of provisional definition logically less exact. Thus, some diseases are defined, accurately enough, by means of what are called their anatomical characters, or the attendant lesions of structure, and some diseases are defined less accurately by their symptoms or the attendant lesion of function. Let us examine asthma from these two points of view.

First, what is the morbid anatomy of asthma? Here I must ask your attention to a very curious and remarkable fact. You may look through a large book upon asthma, an elaborate treatise deserving the repute it has gained, and you will find no chapter dealing with morbid anatomy. Yet surely some asthmatic patients die uncured and some of their bodies are examined, and in all the bodies examined material lesions are found; what are they? Now many of these lesions are found in some bodies only and therefore cannot have anything to do with the immediate cause of asthma. Some of these inconstant lesions are those which are apt to occur in the decline of life and it is noteworthy that Rostan, the discoverer of softening of the brain, who practised at the Salpêtrière in Paris, the great hospital for old infirm women, after asking the question—Whether the asthma of old people be a nervous affection? replies as the invariable result of his post-mortem examinations, That the asthma of old people is a symptom of an organic lesion and especially of atheroma of the aorta and of hypertrophy of the heart. Most physicians of our day would probably agree that Rostan's opinion is correct so far as its general principle is concerned—namely, that organic lesions in the chest are found—but he errs in his particulars by being far too exclusive; several morbid changes are much more frequently met with than those which he mentions. Again,

such lesions as tuberculous affections of the lungs, phthisis (active or retrograde), and acute miliary tuberculosis, though often seen in persons who are not old, cannot be deemed essential to asthma. But signs of bronchitis and pulmonary emphysema are always found; and though no one would call them the anatomical characteristics of asthma, yet the fact that they are constant demands that they should not be passed over or dismissed with the remark that they are mere complications, an obvious begging of the question. That the bronchitis of asthma should be regarded as an accidental complication and by no means as an essential element of the disease is due to the fact that since Willis's time there has always been a strong tendency to look upon asthma as something mysterious and its cause as supersensual. However, you will probably assent to the proposition that either bronchitis and emphysema constitute the morbid anatomy of asthma or it has no morbid anatomy. In either case we must reluctantly conclude that structural lesions cannot help us to a definition.

Secondly, definitions based upon symptoms or disordered functions observed in the patient during life are seldom satisfactory. In the case of asthma any definition of this kind would involve so many explanations, reservations, and distinctions that it would be nothing less than a full description of the disease. I will not attempt to succeed where all nosologists have failed and I fear that we must confess that symptomatology cannot help us to a definition.

So we will proceed to our investigation in the belief that in the case of a given patient most physicians would agree whether he were suffering from asthma or not, and that we have a pretty unanimous though an indefinable notion of the disease. Yet we must admit that the notion has been inconstant, that the extent of meaning of the word has been growing narrower and narrower. Much of what Willis called pneumonic asthma has long since ceased to be called asthma at all; much of what, by way of exclusion, was formerly deemed to be convulsive asthma is now known to be dyspnœa due to disease of the heart, blood-vessels, kidneys, to poisoned blood, and other conditions which need not be enumerated. Thus there is a risk lest asthma should become a mere *caput mortuum*, a kind of dyspnœa left when all known causes of dyspnœa have been separated, the definition of the word being purely negative, indicative of what asthma is not. But asthma is not a mere *caput mortuum*.

Inasmuch, then, as our most trustworthy guides in all the physical sciences, our senses, seem insufficient to enable us to explore the essence of asthma either in the living body or the dead, we must try to grope our way by the help of reason. And we will recur to the rival hypotheses already mentioned and will debate the question which remains much as Willis left it—namely, whether asthma is a pure affection of the nervous system or whether it is all pneumonic, due, that is to say, to gross material changes in the lungs, or whether it is a combination of the two.

I. In the first place, let us discuss the nervous, convulsive, or spasmodic hypothesis.

1. That the air-tubes possess muscular coats or moving fibres was well known to Willis. That these fibres will contract under appropriate stimulus so as to diminish the capacity of the bronchia has been demonstrated many times by experiment, the vagus being the motor nerve. But farther than this our knowledge does not extend. From the best and latest works upon human physiology we cannot learn what the us of these fibres is, nor under what conditions they contract, nor whether they contract quickly or slowly, nor whether their contraction is momentary or enduring, yet surely we ought to be able to answer these questions before we can deduce a pathology of asthma from perverted function of these fibres. The prevailing feeling is that they help the bronchial walls to resist any unwonted pressure from within—that they oppose distension of the air-tubes. But even supposing this opinion to be true we are no nearer to understanding the part which these fibres have been assumed to play in the production of asthma. We will admit that it is conceivable that their contraction may cause dyspnœa, but we must make the reservation that there is no proof of this assumption. And one thing seems to be certain—namely, that if there be such a disease as bronchial spasm, pure and simple, it must be a very rare condition, because it is inadequate to explain the catarrh which manifestly attends most, if not all, asthmatic seizures. Willis himself was far too sagacious a man not to have seen the meaning of this fact. He writes thus: "Although an asthma is sometimes simple from the beginning—viz., either merely pneumonical or convulsive, notwithstanding, after either disease hath for some time increased, for the most part it gains the other to itself, hence it may be concluded every inveterate asthma to be a mixed affection." But we have already seen good reason for doubting whether this doctrine of Willis goes far enough. The whole subject of bronchial spasm is involved in so much obscurity that we cannot admit more than that it perhaps takes a share in the production of asthma but is seldom, if ever, the chief or only cause. And we will dismiss this topic by adopting the words of an able physician of the last century, Robert Whytt, "that a true nervous or spasmodic asthma, without any other fault in the lungs than uncommon delicacy or irritability of their nerves, is a disease which we seldom meet with."

2. Let us come to the muscles of respiration. When I began to lecture on medicine at St. Bartholomew's Hospital it seemed necessary that I should expound some theory of asthma. I had been much struck by observing in bad attacks of asthma the fixed immobility of the chest in a state of the fullest possible inspiration. About the same time I came across a paper by an experimental physiologist who had found that centripetal excitement of the vagus, divided below the junction of the superior laryngeal nerve, produced tetanic contraction of the diaphragm, intercostals, and other inspiratory muscles, a state of things which is necessarily accompanied by dyspnœa, and which, in this respect, resembles the asthmatic paroxysm. And so for a year or two I taught that the fit of asthma, at its beginning at least, was due to centripetal irritation of the vagus. But maturer experience soon showed me that this fixed inspiratory distension of the chest is by no means a constant attendant upon asthmatic dyspnœa, that the inspiratory movements are sometimes free and ample enough, and thus I lost all faith in the doctrine of protopathic inspiratory spasm. Moreover, what is the evidence of inspiratory *spasm* during the attack of asthma? No doubt the chest is in a state of inspiratory distension, dilated to its utmost capacity and fixed in this position. But it is more likely that this state of things is due not to inspiratory spasm but to expiratory debility. Air is imprisoned in the lungs and no amount of forced expiration can empty them. In the last lecture I showed what a very partial process forced expiration is; over many portions of the lung it has no power. If the sufferer could empty his lungs he could fill them again; it is the deflation which is at fault and the extreme inflation is due to incessant forced inspiratory efforts to make the most of what little room for fresh air can be provided by forced expiration. This fact is very well expressed in a tale told by Dean Swift of a farmer who, when dying from asthma, said: "Well, if I can get this breath once out I'll take care it shall never get in again." And thus to conclude this topic I submit that inspiratory spasm is not the cause of the asthmatic paroxysm.

3. Again, Willis thought that convulsive asthma might sometimes proceed from irritation of the pulmonary or thoracic nerves, or of the origin of these nerves in the brain. This is one of those recondite propositions which can be neither maintained nor refuted. Contraction of the bronchial muscular fibres or of the respiratory muscles, if it play any part in the asthmatic paroxysm, may doubtless be due to irritation of appropriate nerves, but the muscular contraction itself has not been proved to occur, and this must be done before we need discuss its causes. The influence exerted by the nervous system upon secretion, nutrition, and the blood-supply is well known as a general fact, but any particular application of this fact to explain the pathology of asthma is at present beyond our power. Thus we have no evidence to show that asthma takes its origin from the nerves or brain.

II. But if asthma be not convulsive, we are thrown back upon the hypothesis of pneumonic asthma, for we have no third explanation before us. Let us review the argument in favour of pneumonic asthma. This argument is wholly analogical. There are several diseases which resemble asthma in certain respects, more or less. Perchance we understand the pathology of these diseases somewhat better than that of asthma. If so, we may inquire whether the nature of asthma can be assimilated to that of the diseases which it resembles. It is obvious that such an argument as this is far enough from deserving the name of induction, but we will be comforted by the saying of a wise man, that to us probability is the very guide of life. Let us enumerate and illustrate the diseases referred to.

1. *A peculiar form of acute bronchitis.*—"Last summer I

went out of town to see a little boy, seven or eight years of age, whose life was very precious to his family. He was thought to be dying of inflammation of the lungs. I found him raised up in bed, supported by his nurse, and breathing with all his might. His skin was hot, his face flushed, and his chest heaved, and his nostrils quivered frightfully. There was no croupy sound. Whatever the disease was it was all within the chest. I percussed the chest: it sounded well in every part. I listened: the air entered freely and reached every cell and vesicle of the lungs; but there was not the least perception of the natural respiratory murmur; a shrill sibilus had taken place of it altogether. Wherever you applied your ear to the chest you might fancy you heard the piping and screaming of a nestful of unfledged birds." Probably many of you will have recognised the hand of Dr. Peter Mere Latham in the somewhat rhetorical character of the description I have just read. I have set before you his description of the disease because it serves as an emphatic text and not because the affection is very uncommon; it is alluded to by many of the best authors and I myself have seen a considerable number of cases. Latham goes on to say: "I am speaking of a disease which must be distinguished from asthma according to the usual acceptation—a disease not habitual to the individual and of which, perhaps, he has never suffered a previous attack." But of course an asthmatic must have his first attack, to which Latham's criterion of habit cannot be applied, and unless he had told us that his patient had never before suffered from a similar attack and never had one afterwards his argument that the disease was not asthma falls to the ground.

Latham's patient certainly suffered from acute dry pulmonary catarrh, to use the phrase of Laennec; but in this form of disease the catarrh is not always dry; on the contrary, small mucous râles are sometimes heard all over the chest. I saw a girl, four years old, who one morning had a little cough but was quite well in all other respects. In the afternoon she suddenly became much worse and her state alarmed everybody. In the evening her distress, dyspnœa, and lividity were great; the upper part of the chest expanded considerably on inspiration, but there was at the same time much depression of the root of the neck, of the epigastrium, and of the base of the chest. All over the lungs small mucous râles were heard. Her voice and cry were natural so that there was no reason for suspecting laryngeal disease. Her temperature was below the normal. I was told that she had suffered from several sharp attacks of what had been called "bronchitis" and "congestion of the lungs"; that she had been subject to eczema all over the body; and that her father's father and brother had been "asthmatics" until they reached maturity. The very same night she improved much and next day she was comparatively well; recovery was rapid.

The chief characteristics of this form of bronchitis may be thus enumerated: the rapidity with which the dyspnœa becomes extreme; the attendant fever, little or none; the whole attack seldom lasting more than two or three days; and the great tendency to recur. In the intervals most of the patients are free from pectoral symptoms, but in some cases emphysema occurs and I have seen it well marked in a patient only three years old subject to this disease. Most of the children have suffered from eczema and most of them come from families prone to asthma, bronchitis, and gout.

When we inquire into the previous history of patients who during youth have been liable to undoubted asthma we find that in a certain number of them their disease dates from one or more attacks of this kind. And surely these attacks *were* asthma from the very first, although they were not deemed to be so at the time but were called in Latham's language "acute bronchial inflammation putting on a peculiar form and affecting a peculiar course." The bronchitis does not cause the subsequent asthma, but it is asthma; the two diseases are identical in nature and the asthma is bronchitis, although a peculiar form of bronchitis.

2. *Spasmodic croup.*—This is an old phrase now seldom used, yet I do not know that we have a better. It is not a good phrase, because it implies a hypothesis which is probably untrue. The disease is characterised chiefly by acute dyspnœa; indeed, most of the cases described by Millar in the last century under the name of "acute asthma" were cases of spasmodic croup. Spasmodic croup is not laryngismus stridulus, for the dyspnœa of laryngismus is momentary, whereas that of spasmodic croup lasts for several hours and on and off for days. Spasmodic croup is not quite the same thing as laryngitis stridula—a disease which is characterised more by dysphonia than dyspnœa. Dr. Benjamin Rush of Philadelphia was the first to apply the epithet "spasmodic" to the disease—an indication probably that he as well as Millar recognised a resemblance to spasmodic asthma. I enter into these details because there still exists, as there always has existed, much confusion in the use of these names. Millar's description of the disease, published in 1769, is vitiated by the fact that he does not distinguish the different kinds of acute laryngeal disease which cause dyspnœa in children. Rush's description, published in 1789, is much more precise, perhaps because more concise. He says that "the cynanche trachealis spasmodica is known (1) by coming on *suddenly* and that generally in the night; (2) by frequent and perfect *intermissions* of the symptoms for hours and in some instances for days, without the least sensible discharge from the trachea; and (3) by yielding to anti-spasmodic remedies, particularly to the warm bath." Rush had examined the body of a fatal case and had found no marks of a membrane or even of mucus in the trachea; the lungs and trachea appeared to be in a sound state.

Many persons have believed in a close analogy between spasmodic croup and spasmodic asthma. Some have even gone so far as to say that "children who have been the subjects of croup or stridulous laryngitis in their earlier years are prone to suffer from true asthma in later life," but judging from the facts of my own experience I am disposed to think that this sequence is not common. Unfortunately, the pathology of spasmodic croup is not well understood. I do not know that the glottis has ever been seen by means of a laryngoscope during the attack of dyspnœa. Could this be done it would go a long way towards clearing up the darkness which hangs over the subject. Moreover, patients when attacked by spasmodic croup seldom die and thus we are deprived of the information which minute post-mortem examination might afford. Nobody doubts that the disease implies an element of acute laryngitis, or of croup, for these two terms are almost synonymous, croup being the acute laryngitis of children. The evidence of laryngitis depends mainly upon these two facts: first, that the attack of dyspnœa is preceded for a few hours by hoarseness and croupy cough and perhaps by other signs of catarrh of the respiratory mucous membrane; secondly, that the interval between the attacks is not free from the same symptoms. Admitting, then, that there is a fundamental ground of laryngitis we must inquire in the next place into the cause of the dyspnœa, so sudden and so temporary, and here lies the difficulty. The epithet "spasmodic" begs the question by assuming that spasm of the glottic muscles is superadded to the laryngitis. But when we compare spasmodic croup with what is universally admitted to be a glottic spasm—that is to say, with laryngismus stridulus—the difference between the two diseases appears to be so great as to make us doubt whether the dyspnœa of croup can be spasmodic. In laryngismus the dyspnœa sets in very suddenly and lasts only a few seconds for if it last longer the child will die. At any rate if the croup be spasmodic we must assume that the spasm is very incomplete and that it lasts several hours—assumptions which seem improbable. It is improbable that the spasm should be always incomplete and should never become a thorough laryngismus and thus kill the patient, whereas deaths from spasmodic croup are so uncommon that we may almost say that they do not occur. Moreover the catarrhal swelling of the laryngeal mucous membrane would render any spasm much more likely to prove fatal, and we must never forget the small size of the glottis in children when we speak of their laryngeal diseases.

But if we give up the notion of spasm are there any other explanations which we can fall back upon? Two have been offered. One was put forward first, so far as I know, by Felix Niemeyer. He supposes that viscid mucus accumulates in the glottis while the child is asleep; that this mucus becomes dry and so glues up the rima glottidis—an ingenious explanation, not wanting in plausibility, but which can be neither proved nor disproved. The chief argument against this hypothesis is found in the great resemblance between spasmodic croup and the peculiar form of acute bronchitis which we discussed just now. In both diseases, the same slight premonitory catarrh, the same sudden onset of alarming dyspnœa in the afternoon, the same speedy abatement of the dyspnœa, the same freedom from fatal results, and the same tendency to recur. Now, there is no reason for thinking that the bronchitic dyspnœa is due to accumulated mucus, still less to dried mucus; and hence we

may well doubt whether spasmodic croup is due to these conditions. But yet, until we can bring our senses to bear directly upon the glottis, until we can see what actually takes place, we may admit that there is possibly some truth in Niemeyer's hypothesis. How often are we tempted to exclaim with the surgeon in the old novel, "A fig for reason, I laugh at reason; give me ocular demonstration."

The other explanation seems more probable. It supposes a sudden and temporary swelling of the mucous membrane of the larynx, such as sometimes occurs in the pituitary membrane during acute coryza when one nostril becomes suddenly blocked, and not by mucus, so far as can be made out, or at least no mucus can be expelled from the affected nostril. In the case of the nose this sudden swelling can be easily understood, for anatomists tell us that the veins of the mucous membrane over the turbinate bones constitute a cavernous structure and that the membrane in this situation is erectile. No structure of this kind has been detected in the mucous membrane of the larynx and hence the argument from analogy is weakened in a corresponding degree. In short, the opinion that spasmodic croup is due to sudden swelling of the mucous membrane depends mainly upon reasoning by way of exclusion, there being fewer objections to this pathology than to the hypotheses of spasm or of mucous obstruction.

Leaving these dry catarrhs of the respiratory tract let us turn our attention to certain catarrhs of a character exactly opposite, being attended by abundant secretion of mucus, for these catarrhs also have a close affinity with asthma.

3. *Paroxysmal coryza.*—In the first place we will consider paroxysmal coryza or "paroxysmal sneezing" as it is sometimes called. And let me set before you a vivid picture of the disease drawn by a sufferer, a married lady, aged 29 years. I copy the exact words of a letter she wrote: "Severe cold in the head every morning for two or three hours after waking; continual running of the nose, sneezing, watering of the eyes; pocket-handkerchiefs are of no use, I have to use towels. Frequent fits of violent sneezing, perhaps repeated a dozen or 20 times. Continual rising of phlegm into the mouth in the morning on waking; often an accumulated mass of phlegm has to be got rid of. Loss of taste and smell and impaired voice in singing. The above symptoms have been present for five years, though they have increased of late. In addition the following have occasioned trouble during the past nine months: a wheezing in the chest, difficulty in breathing, or in taking a deep breath. At times this prevents me from lying down at night; at least I go to sleep in the usual way, but am disturbed three or four hours after by a feeling of suffocation and am obliged to spend rest of night sitting in a chair. This feeling sometimes comes on without any warning. Last week, when returning from a dinner party, I suddenly became oppressed in breathing, and had quite to struggle for breath for 10 minutes or so. Violent exercise, such as running and, I think, swimming, also hearty laughing, produces much the same effect—viz., a wheezing and difficulty in breathing freely. Voice in singing much fallen off. Damp weather and cold winds seem to increase the tendency." Thus far the patient's own report, to which the following facts may be added: there was a tendency in her family to asthma, eczema, and gout; she herself never had eczema, but it had appeared in several of her relatives, and also in her only child, 15 months old.

The connexion between paroxysmal coryza, asthma, and eczema is remarkable. A girl, 11 years old, had suffered from frequent attacks of asthma since the age of two years. Moreover, she had always been liable to fits of bad sneezing with running from the eyes. This sneezing was sometimes followed by asthma, sometimes not. When a baby she had eczema. In her father's family there was a tendency to eczema and gout, but not to asthma; in her mother's family there was probably a tendency to asthma. She had a younger brother who also was asthmatic, and who suffered from eczema in infancy. The girl, the brother, and the mother were all of a dark complexion. A second girl, sister of the patient, was of a fair complexion and had shown no tendency to asthma.

A boy, two years and a half old, became eczematous at six months of age. The eczema cleared off at 12 months and then he began to suffer from asthma. And mark that his attacks of asthma began with sneezing and running from the nose and that an evidence of the chronic nature of the coryza was afforded by the ill-developed condition of the bridge of his nose. But there was no obstruction to his breathing in the nose itself.

At the risk of wearying you let me give you a brief outline of another case which shows the connexion between this recurrent coryza and spasmodic croup as well as asthma. A lady, thirty years old, was subject to spasmodic croup when a child and had been liable to bronchitis all her life. Since the birth of her first child three years ago she had become asthmatic—that is to say, she was continually rather short of breath, but, more especially soon after arising in the morning or upon any sudden effort; her breathing would sometimes become very bad, she would turn blue, and the whole attack would last two or three hours; it had occasionally recurred three or four times in the day. Moreover, for two years she had been subject to attacks of sneezing almost daily, with copious distillation from both nostrils, as bad in winter as in summer. There were no objective signs of disease in the chest, nasal fossæ, or pharynx.

It is no part of my plan to discuss the relation which exists in some cases between these paroxysmal disorders and permanent disease of the nasal and post-nasal regions. But with regard to the actual attack of coryza let us observe that it is more than a mere defluxion of mucus. The mucous membrane of the nasal fossæ is swollen, especially the cavernous tissues over the turbinate bones, which swelling may be enough to make the opposite surfaces of the mucous membranes touch, and to the tickling sensation which ensues upon this contact much of the sneezing and much, in all probability, of the distillation are due. The fact that in some cases asthma very quickly follows coryza suggests the notion of a rapid spreading of the catarrhal affection downwards along the respiratory tract; what in the upper part is a paroxysmal coryza becomes in the lungs paroxysmal dyspnœa or, in other words, asthma.

4. *Paroxysmal bronchial flux.*—Closely allied as paroxysmal coryza and asthma undoubtedly are there is an obvious unlikeness between them in one respect—namely, in the amount of mucous secretion. But there is a peculiar form of what Laennec calls acute pituitous catarrh of the bronchial tubes, which more exactly resembles recurrent coryza in the abundance of the flux, its short duration, and its tendency to recur.

"A woman, aged 32 years, corpulent and of fair complexion, had suffered for some months from an obstinate cough, when one evening she was attacked by a complaint which very much resembled the paroxysm of spasmodic asthma, except that it was much more violent than first attacks of that disease usually are and that its remission was attended with a very copious discharge of frothy serum from the bronchial tubes, which was thrown up by a slight though almost continual cough." On the next morning she was much better and she soon recovered. Some months afterwards she had another attack of the same kind and about 18 months after the first attack she had a third, much more violent. "She was suddenly seized with dyspnœa attended with a convulsive kind of cough which in less than five minutes from the time of attack increased so as to produce the appearance of suffocation. Her senses forsook her, her face became livid, her extremities were cold, and the action of the heart was so much diminished that no pulsation could be felt in the wrist, and but very little in the left side. She remained in this state nearly two hours, during which time a very large quantity of frothy serum tinged a little with blood was discharged without any visible effort by the mouth and nostrils. About the end of that time some very faint and involuntary efforts to cough came on which gradually increased and with every effort large quantities of the frothy serum were thrown off; perhaps the whole quantity might amount to three or four pints. About three hours after the beginning of the attack the difficulty of breathing became very sensibly diminished and her senses were observed to return." In a few hours she had recovered so as to be much the same as she was before the seizure. After a somewhat longer time she had attained the condition of a person in the best state of health. This woman was a patient of Mr. Thomas Baynton of Bristol and her case is narrated in a book published by the well-known Dr. Thomas Beddoes of the same city. You will have observed that the profuse expectoration is said to have been "serous," but this word is no doubt used in a loose sense, for Beddoes who was a good chemist expressly says that the fluid was ascertained by careful inquiry to be mucus, and not saliva, as he at first suspected. In my first lecture on bronchitis I spoke of acute

pituitous catarrh, always a serious disease; and Baynton's case was an instance of this affection but peculiar from its tendency to recur, and in this respect closely resembling paroxysmal coryza and asthma.

5. *Hay fever.*—In this place I might refer to the fact that hay fever, which usually assumes the form of coryza and lacrimation, sometimes becomes an asthma. The paroxysms of hay asthma and of what we call ordinary spasmodic asthma differ in no particular. But this topic has been so fully discussed by our late distinguished President (Sir Andrew Clark) whose opinions are doubtless well known to you all that I need not allude to them here. I will only repeat that the cause, whatever it be, of hay fever will produce ophthalmia, coryza, or asthma according to the portion of the mucous membrane which is affected.

And to sum up the argument in favour of the opinion that asthma is (in Willis's phrase) pneumonical, as distinguished from the convulsive form of the disease, the assumed bronchial obstruction being due, not to any sort of spasm, but to what he calls an afflux of humours upon the air passages. We have seen that there are five or six affections of the respiratory tract which are closely allied to asthma and which may be said to constitute, together with asthma, a special class of diseases, characterised as follows. They set in suddenly, they speedily reach their highest point of severity, their duration is short, they are apt to recur, and in the intervals the patient is more or less free from signs of disease until the catarrh becomes chronic. The tendency to the disorders is hereditary and runs in families; many patients manifest a tendency to two or more of these complaints. If the force of these analogies be admitted we may carry the argument farther and observe that all these diseases are catarrhal. Now catarrh implies two conditions—namely, increased secretion and swelling of the membrane, but as matter of fact neither of these conditions is constant. The defluxion or increased secretion may be absent or at most may be very small, and this constitutes Laennec's dry catarrh. The swelling is more constant, at least in acute catarrh; in paroxysmal coryza, which has so close an affinity with asthma, the swelling can be seen; moreover, both defluxion and swelling occur with great rapidity. The two concomitants of catarrh will explain the most important symptoms of all the disorders in question, including asthma.

If we consider the catarrhal tendency to be due to an inherent delicacy or vulnerability of the mucous membrane, a tendency usually inherited, we seem to be able to understand the reason of the fact that asthmatic persons during childhood are so often liable to eczema, which may be deemed to be indicative of a similar condition of the skin.

In the earlier part of the lecture we arrived at the conclusion that the doctrine of a spasmodic asthma is very imperfectly supported by facts and now the argument has led us to believe that all asthma is merely a peculiar form of bronchitis and that there is no need for any hypothesis of spasm in order to explain the phenomena of the disease. Should it be objected that bronchial spasm may possibly aggravate the effects of catarrh we may appeal to the philosophic law of parcimony—*Entia non sunt multiplicanda præter necessitatem.* You know that this is not a new doctrine. Many years ago it was maintained very ably by Beau. Sir Andrew Clark arrived at the same conclusion by a different path—by noting how one and the same cause, hay fever, produces sometimes coryza, sometimes asthma, and sometimes both together. Which element of the catarrh, defluxion or swelling, obstructs the tubes is a question which naturally arises. The interesting observations of Lefèvre, published more than 60 years ago, upon the expectoration of peculiar mucous cylinders, which he compared to cooked vermicelli, towards the end of an asthmatic attack render it very probable that both secretion and swelling concur to obstruct the bronchia. But there remains another and much deeper question which concerns the asthmatic tendency—in what does it consist? Why are some persons prone to asthmatic catarrh and others not? Why does the disposition run in families? What is the bond which in so many cases connects the several diatheses of asthma, eczema, and gout?

For the solution of such problems as these and for the advancement of all medical learning, may a succession of men like Harvey and Willis never be wanting to our venerated College.

BLACKWATER FEVER.[1]

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IN venturing to bring under notice the disease called "blackwater fever" or "hæmoglobinuric fever" I would submit that we are dealing with a subject of vital importance as regards our colonies. It is admitted that this complaint is the cause of more deaths and invaliding than all the other diseases from which Europeans suffer in West Africa, and the same remark applies to the opposite side of the continent. Koch, for instance, states that this disease creates the greatest havoc amongst Europeans in German East Africa.[2] The disease, however, is not confined only to Europeans, for on the Congo railway many of the Chinese labourers died from it. It has been considered to be rare amongst Africans; however, I am told that many died from it while working on the Panama Canal; and recently, we are informed,[3] there has been a serious outbreak of it among the blacks in the Cameroons, the disease specially attacking those who had come to the coast from the interior. When I first went to West Africa in 1886 blackwater fever was a complaint about which very little had been written and the ordinary English text-books did not even mention the existence of such a disease. Dr. C. H. Eyles had published a brochure on the fevers of the Gold Coast[4] in which a considerable amount of information is given about the disease, and an interesting account of a case of blackwater fever was published by Dr. Easmon in the *Medical Times.*[5] In 1892 I published a small book on the malarial fevers of the Niger, of which a large portion was devoted to this subject.[6] The study of this complaint received a considerable impetus when Dr. Patrick Manson, on March 15th, 1893, read before the Epidemiological Society an interesting paper on African hæmoglobinuric fever.[7] Since that time more and more attention has been given to the disease and more especially quite recently on account of the statement made by Koch that blackwater fever is due to quinine poisoning.[8] I have already attempted to answer Koch's contention that blackwater fever is simply quinine poisoning in a paper read before the Guy's Hospital Physical Society in October last.[9] I have also dealt to some extent with the pathology of the disease, as evidenced by a case which I saw in England with Mr. Wooldridge of Camberley, in a paper which I read with Mr. Pakes before the Pathological Society on Dec. 20th, 1898. I hope here to review the subject and to lay before you a definite statement as to the opinion which I hold with regard to its pathology, causation, and treatment. I cannot let this occasion pass without mentioning how deeply I am indebted to Dr. Washbourn who years ago urged me to write on this subject and showed me the first malarial parasites I had seen. I also take this opportunity of thanking Dr. R. Howard who has just started for East Africa, to whom I am indebted for much help in this paper. On account of his special training we may look to him in the near future for valuable information about the disease under consideration.

DEFINITION.

By blackwater fever, or hæmoglobinuric fever, I mean a febrile disease of malarial type characterised by hæmoglobinuria, jaundice, and vomiting. The name, "blackwater fever," was given on account of the darkness of the urine which could scarcely fail to attract the attention of the sufferers. The colour of the urine is due to the presence of hæmoglobin or methæmoglobin and not of blood, although in some attacks nephritis may occur and real hæmaturia result. Blackwater fever should not be used to include those

[1] A paper read before the Epidemiological Society on March 17th, 1899.
[2] R. Koch: Das Schwarzwasserfieber. Arbeiten aus dem Kaiserlichen Gesundheitsamte, 1898, xiv., 304.
[3] F. Plehn: Die Kamerun-Küste. Studien zur Klimatologie, Physiologie und Pathologie in den Tropen, 1898. (Preface, p. iii.)
[4] Malarial Fevers as met with on the Gold Coast.
[5] Medical Times, August 20th, 1885, p. 277.
[6] Notes on the Malarial Fevers met with on the River Niger.
[7] Transactions of the Epidemiological Society of London, vol. xii., 1892-93, p. 111.
[8] R. Koch: loc. cit., 307-8.
[9] Guy's Hospital Gazette, Oct. 8th, 1898.

attacks of malaria in which nephritis is a primary symptom and which are attributed to plugging of renal capillaries by malarial parasites. My clinical descriptions will be based on my observations of the fever on the West Coast of Africa during nine years' service in the Royal Niger Company, in which time I saw about 100 cases.

DISTRIBUTION.

Since attention has been drawn to blackwater fever the disease has been recognised in several parts where it was formerly considered to be unknown or, at any rate, extremely rare. For instance, when I had one of my earliest attacks on the Niger the medical man who attended me did not recognise my illness as blackwater fever and mistook the colour of the urine for that due to bile. Sometimes when hæmoglobin and albumin were recognised they were thought to be due to a renal hæmorrhage complicating the malarial attack and until quite recently the disease was often spoken of as hæmaturic fever. Many cases have been called yellow fever. I do not think the disease is a new one. Manson states that it was first described by naval surgeons stationed at Nossi Bé, a French settlement off the North-west coast of Madagascar.[10] Plehn quotes Bérenger-Féraud as stating that the disease existed in West Africa in 1820. He further says that it can first be proved to have become prevalent about 1850.[11] The first fatal case on the Gold Coast is believed to have taken place in 1832. It is common throughout West Africa, including the Gold Coast, Sierra Leone, Nigeria, Cameroons, and the Congo and Gaboon regions; it is also common in East Africa—for example, in Uganda, German East Africa, and in the Zambesi districts. I have seen one patient who seems to have suffered from the disease in Somaliland. It has been considered very rare in India but it is probable that it has been overlooked, for recently 11 cases have been described by Mr. Arthur Powell as occurring in Assam and which he states were "identical with the fevers I have seen in those returned from the Gold Coast."[12] It is frequent in certain tropical parts of North and South America and in Cuba. The disease is said by Manson to have been epidemic among the labourers employed in making the canal through the Isthmus of Corinth. Cases are reported from China, and Plehn states that its existence has also been proved in Italy and Sicily, New Guinea, and Java. The disease is stated to be becoming more prevalent in Africa. This cannot be entirely accounted for by the increase in the white population. I attribute its increase in certain parts of West Africa partly to the fact that as the country is becoming more opened up the traders live more on shore than they formerly did, for in the old days trade was in parts of the Niger Delta carried on on the hulks which were stationed near the mouths of the river for that purpose. Another reason appears to me to be the fact that stores, houses, factories, and wharves have to be erected, which of course necessitates considerable disturbance of the soil; in addition to this, large plantations are being formed now that it is recognised that West Africa is, amongst other things, a capital coffee-growing country.

It may not be out of place here to quote from my own lecture[13] the following: "Some will ask, Why has blackwater fever become so common recently? The first case on record in the Niger Territories is, as far as I know, my own, some 10 years ago. The first case in the Niger Delta is said by some old coasters to have occurred in 1882. It seems to me that since we have begun to turn up virgin soil for coffee and other plantations that the disease has become common. When I went to the Niger in 1886 there was not a single plantation. Very soon large plantations were started. I believe I was the first to start them, for I took out with me a great many seeds of English fruit, and soon after these were planted an experimental plantation was started, first at Asaba, then at Abutshi, some 150 miles up the river. It is significant that our first three gardeners died from blackwater fever and that for some considerable time cases only occurred near the plantations, and as plantations became more common so the disease spread to the other stations in the territories."

Outbreaks of blackwater fever have been specially noted when the dry season has been prolonged and very hot and when, therefore, lagoons and ponds which have been long covered with water have been dried up; the same thing has been observed when the rainy season has been broken up by long spells of drought. Easmon, in 1881, had four cases of blackwater fever under observation and attributes these attacks in some degree to the extreme drought of the season, drying up the extensive Quettah lagoon which had been covered with water for twelve years.[14]

CLIMATE AND CONDITIONS OF LIFE.

The River Niger, near the sea, forms an enormous delta and opens by many mouths into the Gulf of Guinea; this delta which consists of mud and sand is covered with mangrove forest and jungle; it is divided and subdivided in every direction by creeks, and as the tide goes out the shore shows itself as a foul mass of mud through which pour turbid streams on their way to the sea. The level of the land is so slightly above that of the water that it is being constantly washed away and where Europeans settle the ground is protected by pegging it round with sticks and constantly backing them up with heavy clay in order to prevent the sea from washing it away; to act as a further protection old hulks and lighters are run close to the shore and left there till they sink or fall to pieces. The earth is constantly damp, for the subsoil water is close below its surface and the ground is itself frequently drenched with heavy rains. The average temperature is about 80° F. and the difference in 24 hours is often less than 10 degrees; the air is highly saturated with moisture, for the rainfall is very heavy, being between 125 and 150 inches in the year. Sometimes in one day it is enormous. For instance, on turning to one of the meteorological reports of the Royal Niger Company, kindly lent to me by Sir George Goldie, the Governor, I find that at Akassa (the port of the Niger) on May 22nd, 1887, it was 4·080 inches, and on May 27th, 1888, it was 5·905 inches.

Owing to the great amount of moisture a mist frequently hangs over the land like a pall, whilst keys rust in one's pocket and boots put away for a day or two become covered with a heavy mildew. Periods of rain are interrupted by times of excessive drought, during which the ground splits and cracks in all directions, exhaling a peculiar stench from the decaying vegetable matter with which it is so largely impregnated. When to the above is added the fact that in the delta regions it is often difficult to obtain fresh meat and always impossible to get a supply of fresh vegetables it will be seen that the conditions of life are not favourable to Europeans. Finally, when we consider that mosquitoes and other blood-sucking insects abound it will be conceded that malarial germs here find a congenial home and in the debilitated Europeans a soil suitable for their growth; and it will not cause us surprise when we find that these regions are prolific in cases of malignant malaria. Farther inland, say 150 miles up the river, the same conditions largely prevail, for the land, alternately drenched and scorched, is covered with a rank jungle. In the wet season the Niger is a splendid rolling river, in parts a mile broad, and capable of bearing sea-going vessels of deep draught; but in the dry season it diminishes so much that its bed is exposed in many parts and it is with difficulty that a small vessel drawing four feet or five feet of water can be navigated through its narrow channels. At the height of the wet season the land is in many parts inundated with water; native huts are flooded and are frequently swept away. I have often seen a native fishing from a canoe in his own house. As the river falls its banks are exposed to the fierce sun and at low water they may be 26 feet or 30 feet high. Away from the river large ponds, lakes, and lagoons are found and these wholly or partially dry up in the hot weather. The natives live in mud houses, under the floors of which they frequently bury their dead. To build their houses it is necessary to dig huge pits in order to obtain the clay suitable for the purpose; these pits are not filled up, therefore they are found all about their towns; the rain partially fills them with water, which stagnates, and low forms of vegetation luxuriate within them; in these pits all kinds of filth are thrown and here snakes, mosquitoes, and other abominations find a pleasant retreat and a quiet breeding-ground.

I have said enough to show why malaria runs riot in these regions; one other factor, however, must not be omitted: I refer to the "conscientious objector"—and he is also in evidence here—for many of the Europeans have an

[10] Tropical Diseases, p. 61.
[11] F. Plehn: loc. cit., p. 104.
[12] Journal of Tropical Medicine, vol. i., No. 5, p. 117.
[13] Guy's Hospital Gazette, October, 1898.

[14] J. Farrell Easmon: The Nature and Treatment of Blackwater Fever, 1884, p. 2.

abiding faith in the pernicious effects of quinine in all malarial cases, whether slight or severe. I have a patient of this class now under my care. Recently he was invalided home on account of repeated attacks of malaria; his medical man supplied him with the quinine necessary for the voyage, but a fellow passenger knew better than the medical man and he and some others persuaded the sufferer to take five grains of quinine every third day instead of twice a day as had been ordered. When I saw the man he was in apparently a hopeless condition and ring-shaped parasites and crescents were plentiful in his blood. He took quinine in full doses and in four days he was able to sit up in his front room. The poor fellow was very grateful, and as he shook hands with me he said that he knew I had had to try the quinine kill-or-cure remedy and he was glad I had not given him blackwater fever. Of course it will be understood that in the higher lands of Nigeria the conditions of life are much more favourable to Europeans.

DIAGNOSIS AND SYMPTOMS.

Besides the hæmoglobinuria which gives the name to this disease there are three other symptoms which are constantly present. Reports of cases are now frequent in which one or other of these other symptoms is absent; such must be accepted with the greatest caution. However, it must not be forgotten that the same disease often varies in its intensity and symptoms in different parts of the world and in different patients and that it is modified by the patient's condition of health, his food, his surroundings, and many other things. There are, in fact, four cardinal symptoms—viz., (1) fever; (2) hæmoglobinuria; (3) jaundice; and (4) nausea and vomiting of bile. We will now consider these symptoms in detail.

Fever.—I contend that the hæmoglobinuria comes on during an attack of fever clinically resembling an ordinary malarial fever. Often the temperature is not taken before the hæmoglobinuria has been observed; the patient feels, perhaps, that he has on him a more or less severe attack of fever but does not trouble much about it, expecting that he will pull through all right as he has frequently done before. Usually the first warning is a sharp rigor on the second or third day of the fever; the patient's temperature will rapidly rise to 103° F. or higher and the next specimen of urine which he passes will be found to be hæmoglobinous. Coincident with this the temperature frequently falls, often to normal; this drop I regard as probably due to the virtual hæmorrhage and wholly analogous to the fall which accompanies hæmorrhage in typhoid fever. It has not the importance which is often given to it and certainly does not justify the argument used by some that blackwater fever is never malarial because the temperature is not maintained for two or three days, as is often the case in ordinary African malaria. Subsequently to the drop the temperature may rise, but not as a rule very high. In fatal cases in which collapse is present the temperature is often subnormal unless it rises owing to complications. In some cases, though, there is a daily remission, yet the temperature continues to rise till death closes the scene.

Hæmoglobinuria.—The colour of the urine may be any shade between light red and that of porter, depending partly on the amount of urine passed and partly on the quantity of colouring matter present. This is undoubtedly in most cases either oxyhæmoglobin or methæmoglobin or both. Thayer, however, states that the colouring matter is always present in the form of methæmoglobin.[15] Albumin is, of course, always present; as a rule bile is absent though it is somewhat difficult to recognise in the presence of hæmoglobin; and many observers—e.g., Plehn—state that they have noted it. On shaking up the urine the froth is pink in colour. I note that Thayer mentions the greenish froth of the urine of patients suffering from hæmoglobinuric fever; if there is one thing of which I am certain it is that the froth of the urine of blackwater fever is in West Africa always, as far as I have seen it, of some shade of red. On microscopical examination none, or only very few, red discs are to be found, but hæmoglobin casts of the renal tubules are plentiful. Nothing else abnormal is constantly found; of course, as in all albuminous urine, bacteria and torulæ grow freely if it has been allowed to stand for any length of time. Blood discs may be present after a day or so as a result of nephritis set up by the hæmoglobinuria.

Jaundice.—It is to be noted that although jaundice is present bile is usually absent from the urine. Copeman states that bile is either entirely absent from the urine or is present in an insignificant amount;[16] at the same time there is plentiful elimination of it in the vomit and the motions. There are none of the usual accompaniments of jaundice, such as slow pulse, itching skin, &c. The jaundice appears to me always to precede the hæmoglobinuria. Bérenger-Féraud says that icterus appears at the onset of the attack.[17] Easmon in one of his cases[18] notes at 9 A.M. that the urine was only highly-coloured and that there was slight jaundice, and that about 3 P.M. the urine was black; and in his paper on the Nature and Treatment of Blackwater Fever (p. 2) he says that the jaundice, which is uniform, is seen from the very first onset of the disease. Now we hear of cases in which jaundice appears only after the hæmoglobinuria. Up to the present I agree with Easmon on this point; but the study of the disease is so recent and the reported cases are so few that I am quite willing to admit that on this, as on many other points in this interesting complaint, further knowledge may cause the older observers to make some modifications of their opinions. The jaundice, as a rule, deepens while hæmoglobinuria is present and gives to the patient a greenish-yellow appearance.

Nausea and vomiting.—These are the most distressing symptoms; they are usually very persistent and hence give much trouble in the administration of drugs and nourishment. The colour of the vomit is usually characteristic, it being of a bright or olive-green colour. Cases are reported without any mention of green vomiting, but I can only say that I have found it to be an almost constant symptom in bad attacks and something of a guide as to the severity of the complaint. I have recorded a case (Case 12) in which there was little or no vomiting.[19] This symptom is regarded as constant by Bérenger-Féraud. He says: "The vomiting is bilious, of a decided green colour; it is a constant symptom at the outset of an attack. It stains the linen of a bright green and when collected in a basin is of a beautiful green or olive colour."[20] In Easmon's case before referred to he states that the patient vomited a clear green fluid which contained particles like chopped spinach. Fisher[21] states that vomiting does not appear if the patient has an empty stomach or if he has some hours previously to the hæmoglobinuria been put on a milk diet; I cannot say that this has been my experience.

Other symptoms.—Amongst the other symptoms which go to make up an attack of blackwater fever the following may be mentioned. Frequently there is severe headache, also pain in the loins and limbs. Patients often complain of numbness of the extremities. Usually there is also pain in the liver and spleen; both these organs are often enlarged. Constipation is usual at the outset of the complaint, but later there is danger of severe diarrhœa, especially if too active purgation has been employed; when this occurs it will, of course, increase the patient's exhaustion and cause special symptoms of its own, such as colic, straining, and smarting of the anus. In one of my cases the motions were frequent and towards the end they became reddish in colour—due, I take it, to hæmorrhage in the bowel; melæna is said occasionally to have occurred. Often there are oppression at the chest, sighing and shallow breathing, due, I think, to the patient's anæmia. The persistent vomiting at times causes severe gastralgia and general discomfort, and to it, no doubt, is due the excessive thirst which is so frequent. Finally, in many of the worst cases, continuous hiccough is present.

(To be continued.)

[15] William Sidney Thayer: Lectures on the Malarial Fevers, 1898, p. 156.

[16] Allbutt's System of Medicine, vol. ii., p. 747.

[17] Bérenger-Féraud: De la Fièvre bilieuse mélanurique des Pays chauds comparée avec la Fièvre jaune; étude clinique faite au Sénégal, 1874, p. 118.

[18] Medical Times, August 29th, 1885, p. 277.

[19] Notes on the Malarial Fevers met with on the River Niger, p. 34.

[20] Bérenger-Féraud: loc. cit., p. 123.

[21] Guy's Hospital Gazette, 1897.

VACCINATION PROSECUTIONS.—At the meeting of the Chipping Sodbury Guardians held on March 17th a resolution was read from the parish meeting recently held at Frampton Cotterell protesting against the vaccination officer instituting prosecutions without the consent of the guardians. On the proposition of the chairman (Sir Gerald Codrington) it was decided to send an answer stating "that the consent of the guardians is not required before proceedings are taken by the vaccination officer."

A CONTRIBUTION TO THE STUDY OF APHASIA.

A CASE IN WHICH COMPLETE DESTRUCTION OF BROCA'S CONVOLUTION BY A NEOPLASM IN A RIGHT-HANDED PERSON PRODUCED NO APHASIA.

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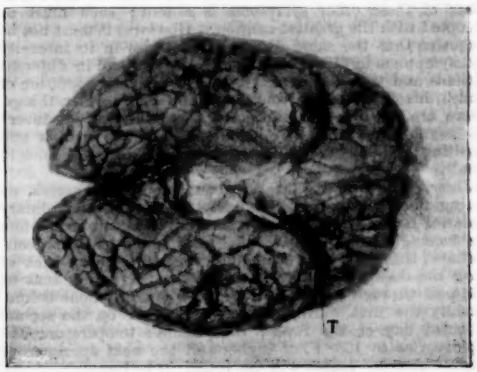
THE following case is of great interest as it exemplifies the activity of the glosso-kinæsthetic centre in the right rather than the left third frontal convolution in a right-handed person. I am indebted to Dr. Bastian for permission to publish the notes of this case and to Dr. Risien Russell for the pathological report.

A woman, aged 23 years, unmarried, was admitted on May 23rd, 1897, to the National Hospital for the Paralysed and Epileptic as an out-patient under the care of Dr. James Taylor. There was no family history of fits or nervous disease; her mother had died from cancer. Her previous health had always been good, with the exception of an attack of pleurisy three years before her admission to the hospital. There was no history of infantile convulsions and she had never had any trouble with her speech. She was right-handed and wrote with her right hand, and she was skilful in playing the mandoline. No members of the family had been known to be left-handed. The history of the patient's illness was as follows. In May, 1896, when she was walking out with her sister she suddenly fell down and was unconscious for a few minutes. There was no warning of the attack. Her face was pale but she was not convulsed, nor did she bite her tongue or pass urine during the fit. During the next fortnight she had two fits of a similar nature, but in the second fit the teeth were clenched and she was slightly convulsed all over and foamed at the mouth. Since that time she had no more fits, but she had frequent sudden attacks of giddiness, pallor, and faintness. No speech defect was noticed after any of these attacks. On examination Dr. Taylor found no signs of organic disease. The patient was treated with bromides and the attacks of giddiness became much less frequent. She regularly came to the out-patient department for the next 18 months, during which time her health was good and she continued her work. During the month of October, 1898, she was noticed to be a little dull mentally and she complained sometimes of slight headache. On Nov. 8th she was noticed by her sister to mumble in her speech and to use wrong words for the period of half an hour. For instance, she called the fire register in her bedroom the "directory" and spoke of the incandescent gaslight as the "metropolitan gaslight." This affection of speech completely passed off in half an hour and was not again noticed. On Nov. 12th she went to a theatre apparently in excellent health and on returning home she entertained her family by singing and playing the mandoline. The next morning she was noticed to be very heavy and somnolent, but she did not complain. This somnolence deepened and she was admitted into the National Hospital for the Paralysed and Epileptic as an in-patient on Nov. 14th and was placed under the care of Dr. Bastian.

On examination the patient was found to be a well-nourished, healthy-looking, rosy-faced girl. She was evidently very ill physically and she lay in bed in a semi-comatose state and never moved a muscle unless roused. Her breath was offensive and her tongue was furred. When she was roused she kept on saying "Oh dear" in a sighing voice. She obeyed simple orders and answered simple questions if they were repeated several times. During the examination she said spontaneously, "Why can't you leave me alone? Let me go to sleep, I'm all right." There was no word-blindness and she could write her name, but required continuous exhortation during the process. She could only be induced to take liquid food with great difficulty. There was no hemianopia. The optic discs showed recent optic neuritis and the surface of either disc was seen with a + 3 dioptre lens. There was complete palsy of the right sixth nerve and nearly complete palsy of the left sixth nerve. The left lower face did not move quite so well as the right. Motion and sensation in the trunk and limbs were natural. There was neither headache nor cranial tenderness. The knee-jerks were not exaggerated, the left being rather the more easily obtained of the two. The wrist and elbow jerks were brisk and equal. The plantar reflexes showed a flexor response on either side. Examination of the thorax and abdomen showed no abnormalities. After her admission into the hospital the stupor gradually deepened and the breathing became stertorous. The temperature ranged between 100° and 102° F. She died from respiratory failure seven days after admission without the manifestation of any further physical signs. A pathological examination was made by Dr. Risien Russell.

The necropsy was performed 12 hours after death. On removing the brain the dura mater was found adherent to the anterior part of the left temporo-sphenoidal lobe over an area of the size of a threepenny-piece. The leptomeninges at the base of the brain showed considerable old patchy thickening. There was slight recent meningitis over the posterior extremities of the second and third left frontal convolutions, and over the anterior part of the left temporo-sphenoidal lobe The cortex of the posterior end of the third frontal convolution, including that part between the ascending and posterior limbs of the Sylvian fissure and the

FIG. 1.



Inferior aspect of the brain, the cerebellum and pons having been removed. (The distortion of the right occipital lobe was the result of pressure during the process of hardening. T. Tumour projecting in Sylvian fissure.)

contiguous part of the left temporo-sphenoidal lobe, presented a grey jelly-like aspect suggesting the presence of a glioma in that region. To the touch this part of the cortex was elastic and yielding, suggesting the presence of a cystic condition. The inferior aspect of the brain showed a growth filling up the left Sylvian fissure and growing from the posterior part of the orbital lobule. Its projecting part was

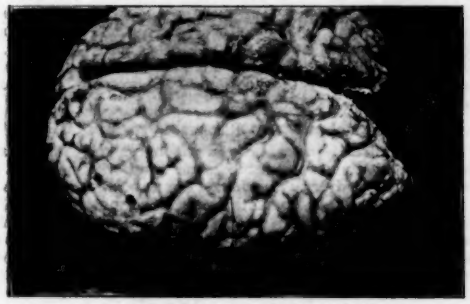
FIG. 2.

Lateral aspect of the left hemisphere. The surface-extent of the growth has been indicated by black-headed pins.

semilunar in shape, about an inch in its transverse extent and a third of an inch in its antero-posterior extent. The anterior border of the growth was parallel to the anterior border of the left temporo-sphenoidal lobe and it extended in the Sylvian fissure from close outside the outer root of the left olfactory tract to the bifurcation of the Sylvian fissure. Figs. 1, 2, and 3 show the position of the growth upon the surface of the brain.

The brain was hardened in formalin and subsequently two horizontal sections were made, one at the level of the corpus callosum and the other at the level of the upper border of the anterior commissure. The growth was found to involve the inferior margin of the left second frontal convolution at about its middle, the whole posterior part of the left third frontal convolution, the posterior part of the orbital lobule, and to a small extent the anterior gyrus of the island of Reil. It crossed the posterior limb of the Sylvian fissure about a centimetre from its commencement and involved the anterior part of the first left temporo-sphenoidal convolution. The measurement of the growth in its maximum vertical

FIG. 3.



A

The left hemisphere seen from the side and above. The position of the growth is indicated by black-headed pins. A, Fissure of Rolando.

extent was five centimetres, in its coronal extent it was 3·7 centimetres, and in its sagittal extent it was three centimetres. The ascending frontal convolution was not involved. The right third frontal convolution and the right hemisphere appeared perfectly healthy. The growth presented a gelatinous semi-transparent appearance on section, and there were several small cysts with clear jelly-like contents of from two to four millimetres in diameter in its upper part. There were several hard white nodules in the growth, the largest being of the size of a pea. For some

FIG. 4.

Horizontal section of the brain at the level of the corpus callosum. The area of softening round the growth is indicated.

distance round the growth the white matter of the centrum ovale was much softer than elsewhere. The extent of this condition is shown in Fig. 4. The other organs of the body presented a normal appearance. On microscopical examination the growth was found to consist of small round-celled tissue, the cells being densely aggregated around the blood-vessels which were greatly thickened. Throughout the tissue were numerous large cells which stained very faintly. Several large patches of substance presenting a caseous appearance and which did not stain were seen in each section and corresponded with the hard nodules seen with the naked eye. The appearances suggested a long-standing and slowly-growing neoplasm.

So far as I am aware no case of the same kind as this one has been previously recorded. It proves the possibility of the fortuitous major activity of the glosso-kinæsthetic centre in the right third frontal convolution in a right-handed person. It also shows that right-handedness does not necessarily involve the major activity of the third left frontal convolution for the production of articulate speech.

It has been suggested by Byrom Bramwell [1] that in some right-handed persons whose ascestors were left-handed the glosso-kinæsthetic centre may possibly be situated in the right hemisphere. I obtained in this case a most complete account of the family history and there was no instance of left-handedness in the family. The presence of a pathological condition in the usual position of the glosso-kinæsthetic centre (the left third frontal convolution), together with a completely functioning glosso-kinæsthetic centre in another part of the brain (the right third frontal convolution), strongly suggests a causal relationship between the two. It may be argued that in this patient in early life the left third frontal convolution was the seat of some developmental or acquired defect which caused the right third frontal convolution to take up the speech function when that was learnt and which predisposed to the occurrence of the new growth, but there was no pathological evidence in support of this view. Such a lesion in early life would in all probability have caused some atrophy of the affected cortex and asymmetry of the convolutions and in this case the convolutions were quite symmetrical upon the right and left sides. Nor was there any evidence of any trouble with the speech function in early life. She had begun to talk at the age of 18 months and had learnt to talk quickly and well. It is inconceivable that the glosso-kinæsthetic function could have been taken up by the right third frontal convolution *pari passu* with the devolution of the left third frontal convolution owing to the presence of a slowly growing neoplasm without some speech defect being at any time noticeable. The history of the patient, both previously to and during her illness, was obtained in the greatest detail from those who were constantly with her and no speech defect had been noticed. The facts of the case suggest that the unusual location of the leading or active glosso-kinæsthetic centre and the presence of a neoplasm in the left third frontal convolution were simply coincident, and that the right third frontal convolution had in this patient always performed the function of a glosso-kinæsthetic centre.

Left-handedness does not always transfer the leading speech centres to the right side of the brain, as exemplified in Dickinson's [2] case and Wadham's [3] case, and notwithstanding the immense influence of heredity, right-handedness may in rare cases be associated with leading speech centres in the right hemisphere, as I think this case proves. Bastian [4] has suggested that a similar location of the glosso-kinæsthetic centre may have been present in Barlow's [5] case, in which after an attack of right hemiplegia and aphasia the power of speech returned on the tenth day and the patient had apparently recovered from his symptoms in a month. A second attack three months later of left brachio-facial monoplegia deprived him entirely of his speech. Symmetrical lesions of about the size of a shilling were found in each hemisphere involving the posterior end of the third frontal convolutions. In a case recorded recently by Byrom Bramwell, [6] a similar explanation would accord very well with the facts of the case. In discussing his case he inclines to a different explanation. Thus he suggests "that in very rare instances, of which the present case is an illustration, the functional activity and educational endowment of the right third frontal convolution are so perfect that the speech function can be immediately taken up when the left motor vocal speech centre is acutely and completely destroyed." My

[1] Lectures on Aphasia, Edinburgh Medical Journal, 1897, vol. ii.
[2] Bastian: Aphasia and other Speech Defects, 1898, p. 90.
[3] St. George's Hospital Reports, 1868, vol. iv., p. 245.
[4] Loc. cit., p. 322.
[5] Brit. Med. Jour., July 23th, 1877.
[6] Brain, 1898, p. 343.

suggestion is only one step farther than this and renders the explanation of the case less difficult. I would suggest that the transient speech defects in these two cases were of the same nature as are the speech defects sometimes seen in cases of left hemiplegia in right-handed persons.

The incompleteness of the notes upon speech defect in this case is due to the fact that it did not present itself as a case of aphasia. The handwriting was tested, as it is a routine practice in the National Hospital for the Paralysed and Epileptic for each patient to write his name in the notes. Word vision was tested in the routine examination of eyes presenting optic neuritis.

A PRELIMINARY NOTE UPON CERTAIN ORGANISMS ISOLATED FROM CANCER AND THEIR PATHOGENIC EFFECTS UPON ANIMALS.[1]

BY H. G. PLIMMER, M.R.C.S. ENG., F.L.S.,
PATHOLOGIST AND LECTURER ON PATHOLOGY AND BACTERIOLOGY, ST. MARY'S HOSPITAL.

DURING the past six years I have been studying the cell-inclusions which are found in cancer and their relation both to the origin and course of the disease, and for this work I have had to examine 1278 cancers taken from various organs and parts and of all possible varieties. Out of this large number of cases there have been a few—nine in all—in which the cell-inclusions have been extremely numerous, so that at the growing edge, and even far into the tumour, scarcely a cell could be found without an inclusion, sometimes with as many as 36 even of these inclusions in one cell, and these bodies have been similar to those which Metchnikoff, Ruffer, and others, as well as myself, have regarded and described as parasites standing in causal relationship to the disease. In two out of the nine cases mentioned these bodies have been present in enormous numbers, and I have succeeded in isolating from the last of these remarkable cases an organism which is pathogenic in a peculiar manner to certain animals and whose virulence I have been able to keep unimpaired for some months.

PREVIOUS WORK ON THE EXPERIMENTAL PRODUCTION OF TUMOURS IN ANIMALS.

The only work, I think, that needs mention here in connexion with this heading is that of Sanfelice in Cagliari and of Roncali in Rome. Sanfelice has produced tumours in animals with organisms which he isolated from infusions of various fruits, and they both have isolated organisms from cancers, which I believe from their descriptions—I have not seen their cultures—are morphologically somewhat similar to those I am about to bring before you. But Sanfelice's organism appears to have been very difficult to isolate in a virulent form from human cancer and to keep virulent, so that in his last paper[2] he treats only of the organisms derived from fruit infusions and of their effects upon animals. Most of the statements are doubted by the German pathologists, including such a good observer as Baumgarten, but from my own experience I do not find any reason to doubt any of Sanfelice's statements, and I think that he deserves the greatest credit for removing the study of the etiology of cancer from the histological to the experimental region of work.

ON THE METHOD OF ISOLATION ADOPTED.

The cancer from which the organisms I am about to describe were isolated and with which my experiments have been made was taken from the breast of a woman, aged 35 years; it had a history of only two months' duration and it was growing rapidly at the time of the operation. Immediately after removal I examined a fresh scraping and finding such an extraordinary number of the bodies I have mentioned in the cells I cut, with all possible precautions against contamination, with a carefully sterilised knife, very thin slices from the growth which I placed with a little of the juice scraped from the cut surface in a flask containing the following liquid, which was of course carefully sterilised. This medium consisted of an infusion made from cancer, just as the ordinary beef infusion is made, to which was added, after careful neutralisation, 2 per cent. of glucose and 1 per cent. of tartaric acid. This medium was the outcome of many trials with all kinds of mixtures and I tried it in this case as I had already got similar organisms to grow in it from two previous cases but they had no pathogenic properties, and this, I think, was due to the omission of the next step. This medium, too, is particularly useful, as hardly any bacteria, however hardy, will grow upon it. Then, remembering that in the body these organisms were under anaerobic conditions, I exhausted the air from my flasks and passed hydrogen into them and finally sealed them up. This I have found is of great importance as regards the maintenance of the virulence, and I find consequently that there is no falling off in the virulence of my cultures which are as active now as they were four months ago. Five flasks were made in this way, but in spite of precautions two became contaminated with moulds; in the other three, however, I got after from three to five days a pure culture of the organism described below has been kept growing in this and various other media ever since.

MORPHOLOGY AND RELATION TO MEDIA.

The organism is apparently a saccharomyces, but I am informed that, according to some authorities, such as De Bary, Cuboni, and Duclaux, the saccharomycetes are nothing but the developmental stages of fungi which really belong to either the phycomycetes, the ascomycetes, or the basidiomycetes. Moreover, they state that in some species of mycelium-forming fungi, single parts, especially conidia, can grow in the saccharomyces form on certain nutrient media, so I will not attempt to locate this organism at present. Sanfelice and Roncali, however, definitely state that the organisms they have isolated are blastomycetes.

When grown in the medium described these organisms produce a cloudiness which becomes visible in about 48 hours and increases till about the sixth day, when the growth sinks to the bottom, the medium then becoming clear; no scum or pellicle is formed. When grown on this medium solidified with agar the organisms form small round colonies which remain separate. After some weeks the colour, which was originally white, becomes yellow. The colonies do not attain at any time a great size.[3] Gelatin is not liquefied, but the growth on this medium is never luxuriant. On potato a thick white layer is formed which in about two weeks will cover the entire surface, changing then to a yellowish-brown colour. They will grow aerobically, but not so well, at any rate at first, and they lose their virulence in a short time if continuously grown in this way. Microscopically they are round bodies, frequently growing in clumps, with a central portion which stains deeply, and in most cases with a thin, strongly refractile capsule which sometimes shows a double contour; but some young forms can be seen which are apparently without a capsule. The size varies from 0·004 millimetre to 0·04 millimetre. Their reproduction appears to be by budding, but I have fancied that I have also seen in a few instances endogenous budding; of this, however, I am not certain. These bodies correspond morphologically with those found in the original tumour and also with those described by Ruffer and myself and by some others of those who have worked at the microscopical appearances of cancer.

EXPERIMENTAL RESULTS.

I have selected from the experimental work which I have done with these organisms those experiments which seemed to me to be the most important. Up to the present time I have not been able to make any such experiments upon such animals as would allow of the easy bringing of these organisms into contact with a likely epithelial surface with the exception of the cornea (*vide* Experiment No. 4), but through the kindness of Dr. Rose Bradford I have been enabled now, at the Brown Institution, to inoculate a bitch in the mammæ, but the time is as yet too short to enable me to make any statement as to the result. The cultures used in the following experiments were made in the medium previously described.

1. *Rabbit.*—Intravenous injection of five cubic centimetres of an eight days old culture. There was no obvious result.

[1] A paper read before the Royal Society on March 9th, 1899; communicated by Professor J. Rose Bradford, F.R.S.

[2] Zeitschrift für Hygiene, 189

[3] The following specimens were shown: (1) sections of the cancer from which the cultures were made; (2) the cultures on various media; (3) preparations of the cultures; (4) sections of the organs of the animals in which tumours had been produced; and (5) animals, or portions of them, in which tumours had been produced.

The rabbit was killed 13 weeks afterwards and was found to be apparently normal.

2. *Rabbit.*—Intraperitoneal injection of 10 cubic centimetres of a 21 days old culture. There was no obvious result. The rabbit was killed eight weeks afterwards and was found to be apparently normal.

3. *Rabbit.*—Subcutaneous injection of five cubic centimetres of a three days old culture. There was no obvious result. This rabbit was used later for Experiment No. 4, and when killed 14 weeks after Experiment No. 3 it was found to be normal; nothing was found at the seat of injection.

4. *Rabbit.*—Both corneæ were scraped and the sediment of a 10 days old culture rubbed over them. The rabbit was killed in 48 hours. There was considerable proliferation of the corneal epithelium which had forced its way into the subjacent tissue. The organisms were found in the epithelial cells after fixing and staining, with appearances similar to those of the inclusions in cancer cells as described by Ruffer and myself.

5. *Rabbit.*—Trephined and inoculated beneath the dura mater with five cubic centimetres of a seven days old culture. The rabbit died in nine and a half days; the wound had healed. The brain and cord contained the organisms in large numbers. Pure cultures were obtained from the brain, the liver, and the kidney. Nothing was obtained from the blood, the spleen, or the peritoneal fluid.

6. *Rabbit.*—Trephined and inoculated beneath the dura mater with five cubic centimetres of a three days old culture made from the brain of No. 5. The rabbit died in eight days; the wound had healed. Organisms were found in the heart, the blood, the brain, and the cord. Pure cultures were made from the brain, the cord, the kidney, and the liver.

7. *Guinea-pig.*—Subcutaneous injection of five cubic centimetres of a 10 days old culture. There was no obvious result. The guinea-pig was killed in 15 days and was found to be apparently normal; nothing was found at the seat of injection.

8. *Guinea-pig.* — Intraperitoneal injection of 10 cubic centimetres of a three weeks old culture. The guinea-pig died in 20 days. The liver, the lungs, and the peritoneum were studded with new growths of a white colour; the lymphatic glands in the abdomen were enlarged. Pure cultures were made from the liver, the lungs, and the abdominal glands; nothing was obtained from the blood. Sections of the above-mentioned parts showed new growths of an endothelial nature, with the organisms within the cells and free in the tissues.

9. *Guinea-pig.* — Intraperitoneal injection of 10 cubic centimetres of an eight days old culture, made from the abdominal glands of No. 8. The guinea-pig died in 17½ days and showed the same appearances as No. 8. Cultures were made as before and also from the blood. In this case the omentum was also studded with new growths.

I have given here some of the failures and successes which have been constant, and I should like to add that Professor Wright of Netley has repeated some of the experiments I have made and that his results coincide with mine.

The important point, of course, of all this is—the experimental production of malignant tumours in animals by an organism isolated from a malignant tumour in man. That these experimental tumours are, so far with one exception of endothelial origin is due to the fact that until I was enabled to inoculate a dog I found it very difficult to get the organism in contact with likely epithelium; all the above methods of inoculation, save one, could only bring them into contact with endothelial surfaces. No. 4 (the corneal experiment) is the only one in which an epithelial surface was tried and in this case the great proliferation of the epithelium, the appearances of the organisms in the cells, and the irritation produced, were very striking. But the fact of being able to excite a malignant growth with an organism isolated from cancer is, I think, a point of some importance in the etiology of cancer. I am at present experimenting with the view of observing the effects produced by these organisms when brought into contact with epithelia.

The deductions which I think may fairly be made from these observations and experiments are as follows:—

1. That there are certain cancers which occur very rarely in which there are in enormous numbers intracellular bodies of the kind described by Ruffer, by myself, and by others as parasitic protozoa. (From the rarity of these cases and their comparatively acute course one is tempted to think that they are not due to the same cause as ordinary cancers, but there is really no more difference between them and ordinary cancers than between acute and chronic tubercle.)

2. That by the use of appropriate means these intracellular bodies can be isolated and cultivated outside the body.

3. That these cultures when introduced into certain animals can cause death with the production of tumours, so far with one exception of endothelial origin, and that pure cultures can be made from these growths which when inoculated into suitable animals will produce similar tumours.

St. John's Wood-road, N.W.

A CASE OF

TUBAL GESTATION WITH RUPTURE AND FATAL HÆMORRHAGE AT A VERY EARLY PERIOD OF PREGNANCY.

BY F. LUCAS BENHAM, M.D., M.R.C.P. LOND.

THE following case I believe to be sufficiently uncommon to be worthy of record.

The patient was a woman, aged 23 years, who had been married for three and a half months and had never borne a child. She was said to have formerly drunk somewhat to excess and latterly she had suffered from indigestion. Otherwise her health and habits had been generally good. Menstruation had always been regular. Since her marriage (at the end of April, 1898) she had missed two periods—May and June. The July period was profuse, lasted for three weeks, and was followed after an interval of one week by the next period (early in August) which appeared to be normal and which ceased on August 12th, two days before the present illness. On August 14th, 1898, I was asked to see the patient in the temporary absence of Dr. C. A. Crane (who had not previously seen her, however). She was said to be suffering from abdominal pain. I visited her at about 2 P.M. and found her lying in bed. She said that she had not felt well that morning and that on trying to get up she did not feel able to do so. At 10 A.M. severe abdominal pain came on. She admitted having eaten some pork sausages and ice-cream the day before. There was no nausea, vomiting, or diarrhœa. The bowels had been last moved naturally on the previous morning and were regular. The tongue was clean and moist. The skin was very pale and distinctly cool, but the patient had naturally a white or somewhat sallow complexion associated with black hair, so that she had often been supposed by strangers to be Italian. There was, however, no marked pallor of the lips. The pulse was weak and compressible. She was perfectly conscious, not collapsed, could move about readily in bed, and did not seem dangerously ill. I examined the abdomen carefully. There was no distension or abnormal note on percussion and the knees were not drawn up. There was diffused pain over the abdomen, especially over the lower part, and it seemed somewhat greater on the right side than elsewhere; there was slight general tenderness. No tumour was to be felt. The patient confidently denied pregnancy. No vaginal examination was made. The treatment ordered was half an ounce of castor oil to be taken at once, to be followed by one or two draughts containing opium and belladonna. Hot fomentations were to be applied to the abdomen and milk and soda water or arrowroot were to be taken as food. At about 11 P.M. the patient's husband called to tell me that his wife was no better, that the pain was very great, and that she wanted relief and sleep. Two doses of castor oil had been given without any action of the bowels. I went again to the house and found the patient very much worse—in fact, dying. She was extremely pale, with pinched face and staring eyes, and she was gasping for breath. She complained of pain all over the chest and abdomen, that her head was light and swimming, and that she could not get her breath. The skin was cold, except over the abdomen where fomentations had been applied. The abdomen was much distended and dull in the flanks. The patient had passed no urine and had been slightly sick at times. The heart could be felt beating and was rapid, the respiration also was hurried, and the radial pulse was imperceptible. I saw that she could only live half an hour and that it was too

late to do anything, so I merely gave a small hypodermic injection of morphia. Death occurred at midnight.

At the post-mortem examination made 15 hours after death the body was found to be well nourished. The skin was pale, there was not much hypostatic congestion, and there were no lineæ albicantes. Rigor mortis was well marked in all the limbs. Froth issued from the nostrils. The face was pale and bloated. There was a thick layer of subcutaneous fat. On making the usual incisions dark fluid blood ran in a stream from the peritoneal cavity. About three or four pints were sponged up and removed and a good deal of black tenacious clot was taken in fragments from the pelvis, though at present nothing visibly wrong was observed. The heart was healthy but pale. The cavities were empty except for a very little clot in the right ventricle. There was a little emphysema in the lungs and the lower lobes were œdematous; otherwise they were normal. Examination of the abdomen revealed no peritonitis and no tumour or aneurysm could be discovered. The stomach was dilated and it contained several ounces of fluid food. The intestines were normal. The liver was of average size, pale and bloodless, and rather fatty. The spleen and pancreas were normal. The kidneys were of normal size and structure. After removing all the viscera and the remaining adherent blood-clots the uterus and its appendages were carefully examined. A lesion was then observed in the left Fallopian tube. About two inches from the uterus was a small, smooth, elongated swelling about three-quarters of an inch in length and of the size and shape of a small bean; in one spot on its upper surface it was rough, soft, and red, and blood exuded on gentle pressure. This was seen to be the chorion of a very early pregnancy exposed by rupture of the containing Fallopian tube. The ovum seemed partially moveable in the stretched tube and could be rolled about in it. There were no adhesions or any traces of former peritonitis or of any other disease about the Fallopian tube, except one or two very small cysts in the fimbriæ. The uterus was a very little enlarged and was lined by a thin, reddish, adherent membrane (decidua?). The substance of the uterus was normal. Each ovary was enlarged, about two inches in length, and full of cysts as big as peas. In the left ovary was a recent corpus luteum about one-third of an inch in diameter, with a corrugated yellow capsule and a red interior.

Remarks.—The points of interest about the case are as follows:—

1. It is uncommon for extra-uterine gestation to occur in a nullipara as in this case.

2. The chief feature of the case is the early period at which fatal hæmorrhage from rupture of the tube took place. It would be interesting to determine the precise age of the ovum. From the history above given it would appear probable that the woman conceived shortly after marriage and that this ended in an early miscarriage in July. It could not, however, have been this pregnancy, even if no actual abortion had taken place, which led to the final disaster, for an ovum must be still alive and growing to cause rupture of the containing tube and if that had been the case the ovum would have attained a much larger size. Probably another conception took place, dating soon after the catamenia ceased about the end of July or between that and the next menstrual period, which began about August 5th or 6th. At any rate, from the history the duration of the pregnancy at the time of death would appear to be between 10 and 20 days. Mr. T. W. P. Lawrence, the curator of University College Museum, has made a minute examination of the specimen and he reports that from the size of the chorionic vesicle and the development of its villi, which were of considerable length and decidedly branched, the age of the ovum must have been very nearly three weeks, so that conception must have taken place not much later than July 24th, when the protracted menstruation had hardly ceased. Mr. Lawrence's measurement of the distended part of the Fallopian tube is 20 millimetres, the size of the chorionic vesicle from 15 to 20 millimetres. These measurements probably indicate the extreme length and not the diameter of a sphere. But even allowing fully three weeks for the duration of pregnancy, it is very rare (and perhaps unique) for rupture with fatal hæmorrhage to take place as early as this. I have searched through many text-books and voluminous indices but have been unable to find another instance on record. Early rupture is of course not very uncommon but the hæmorrhage is usually slight and only amounts to a hæmatocele and is practically never fatal. I need not quote all the opinions stated in the books about the period at which fatal rupture occurs. I will only mention one or two as examples. Thus Barnes, in his work on Diseases of Women, says that rupture occurs the more early the nearer the gestation sac is to the uterus. Thus an interstitial or tubal gestation usually ruptures from the sixth to the twelfth week though it may be postponed much longer. Six to eight weeks is the time given by most authors. Mr. J. B. Sutton, in his elaborate article on Extra-uterine Gestation in Allbutt and Playfair's "System of Gynæcology," says that primary rupture takes place in the majority of cases between the third week and the tenth week, but he does not say that *fatal* hæmorrhage may take place till after the first month.

3. The most interesting aspect of the case is the clinical one of diagnosis. I think that the difficulties in this case made certainty, when I saw it, out of the question. There was no physical, symptomatic, or historical evidence of pregnancy; the facts were all against it and I therefore excluded the possibility of this being the cause.

The case most nearly resembling mine in this respect that I have found reported is one by Dr. Burton in the Transactions of the Obstetrical Society of London, Feb. 3rd, 1881. In that case fatal hæmorrhage occurred in a woman who was still suckling a child seven months old and who had just menstruated again. The ovum was of the size of a Barcelona nut and was said to be of six weeks' duration. At the time I saw my patient first there was no indication of abundant hæmorrhage, there was no shock or collapse, there was no marked pallor of the lips, and there was no accumulation of blood in the peritoneum. There were, however, two points which I distinctly noticed—viz., coldness of the surface, and a peculiar, weak, compressible pulse. I find that I noted the same phenomena in another case of the kind which I met with several years ago. I suppose they denote hæmorrhage and I might perhaps have attached more importance to these symptoms, but, as I have already said, further evidence of hæmorrhage was wanting. The absence of uterine hæmorrhage was evidence against abortion in case pregnancy existed. I excluded peritonitis, rupture of the stomach, intestinal obstruction, and acute pancreatitis from the diagnosis and was forced to assume, at any rate provisionally, the presence of a bad attack of simple colic. When I saw her at the end the existence of intra-peritoneal hæmorrhage was plain, but she was then dying, and it is doubtful whether transfusion or intravenous injection of saline fluid preparatory to laparotomy would have saved her even if the means of carrying out the process had been at hand, which was certainly not the case.

Elizabeth-street, S.W.

A CASE OF CHEYNE-STOKES RESPIRATION WITH OTHER RHYTHMICAL PHENOMENA.

BY WALTER K. HUNTER, M.D., B.SC. GLASG.,

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THE patient in this case, a child aged four years, was admitted to the Glasgow Royal Infirmary on Sept. 19th, 1898, in an unconscious condition, evidently the subject of some form of cerebral meningitis. The history obtained from the parents was to the effect that their child had been quite well till the month of March—i.e., six months before—when she contracted measles, and since when she had been ailing more or less constantly. During the summer the patient was in regular attendance at the outdoor department of the Children's Hospital where I saw her on several occasions and where she was diagnosed as having "some pulmonary trouble, probably tuberculous." Later a persistent diarrhœa set in and it was with difficulty that this could be controlled by means of drugs. A strabismus had been noticeable ever since the attack of measles but not before. The meningeal symptoms were first observed about the beginning of September, commencing with pain in the head and followed later by vomiting, listlessness, and drowsiness. From Sept. 15th the head had been much retracted and coma more or less complete was constantly present. On admission to hospital the child was

quite unconscious though the swallowing reflex was still present. The pupils were unequal, the left being dilated and the right medium. Ophthalmoscopic examination revealed a double optic atrophy but no tubercles were to be seen anywhere in the fundus. The head was retracted and the abdomen was slightly retracted but was quite soft and doughy to the touch. Tache cérébrale was well marked. The temperature was 98° F., the pulse was 133, and the respirations were 25. During the first few hours after admission twitching movements were at intervals noted in the right arm and leg, also more extensive movements in both arms and legs. The respirations all this time were sighing in character, but after midnight the breathing assumed the Cheyne-Stokes character, the respiratory cycle lasting 50 seconds and consisting of 80 separate respiratory movements. The pupils likewise showed rhythmical movements. During the pause they became contracted, while with the respiratory movements they began to dilate, till at the acme of respiration they were widely dilated. While thus dilated the pupils reacted slightly to light. Rhythmical movements corresponding in time to the above were also observed in the arms, especially in the right arm. The arms it is to be noted were at this time more or less rigid and they presented slight tremor. They were extended, with the thumbs adducted and the fingers flexed at the inter-phalangeal joints. During the advent of the Cheyne-Stokes respiration, then, this tremor exhibited a rhythmical activity of such a nature that during the pause the tremor was scarcely perceptible, increasing, however, with the breathing till at the height of the respiratory cycle the tremor presented movements of considerable amplitude. As the respiratory movements lessened so did the extent of the tremor movement. These various rhythmical phenomena were observed at frequent intervals until the time of death, about 30 hours after admission into hospital.

On post-mortem examination the convolutions of the brain were found to be much flattened and the soft membranes and ventricles contained a large quantity of clear serous fluid. Numerous tubercles were to be found scattered throughout the soft membranes. The brain substance generally was very soft, but otherwise it presented no abnormal appearances. Both lungs were studded with miliary tubercles of comparatively large size and there was extensive tuberculous consolidation and excavation of the upper lobe of the right lung. The right bronchial glands were enlarged and caseous, but the left seemed healthy. Miliary tubercles were to be seen in the liver, spleen, and kidneys, and some small and evidently recent tuberculous ulcers were found in the colon and ileum. The mesenteric glands seemed healthy. The medulla and pons were fixed in formol and stained with theonin according to Nissl's method. Numerous sections were examined at different levels, special attention being paid to the sections passing through the alæ cinereæ. In none of the sections, however, could any distinctive change be found in the ganglion cells of either the tenth, the twelfth, or of any of the other nerve nuclei. Many of the ganglion cells I found to be quite normal. Some showed what has been termed a "polar" or "apical" chromatolysis and some were very faintly stained like to the so-called "ghost-cells." But these changes were seen throughout the whole medulla and pons, not confined to any special level or nucleus, and I take it that they were due to the meningitis or the high temperature (the temperature reached 107·6° before death) and not to be specially associated with the Cheyne-Stokes respiration.

That, then, very briefly is the record of this case and it would seem to be of some interest in that (1) careful microscopic examination of sections of the medulla through the alæ cinereæ—the supposed rhythmical respiratory centre—showed no distinctive change, at least not more than in the rest of the medulla and pons; and (2) in that rhythmical movements were also present in the arms, showing the extent of the affection. Some time ago Dr. Terrien[1] reported a case of Cheyne-Stokes respiration where not only was there a rhythmical movement of the pupils, but also a rhythmical anæsthesia of the parts of the face supplied by the fifth nerve. During the pause this anæsthesia was present, passing off again as soon as the respiration began. In explanation of this Dr. Terrien points out that the ciliospinal centre and the sensory nucleus of the fifth nerve lie close to the respiratory centre and that whatever was causing the Cheyne-Stokes breathing had evidently extended its influence to these adjacent centres. In my case tactile sense over the area of the fifth nerve could not be tested as the child was unconscious all the time the Cheyne-Stokes breathing was present. But to it Dr. Terrien's explanation would not seem to be applicable, for the arm-centres are certainly in no way adjacent to those of the pupil and respiration. My case seems rather to favour the view advanced by Dr. G. A. Gibson[2] that Cheyne-Stokes breathing and its accompanying rhythmical phenomena "are instances, among many others, of the common tendency towards 'pulsatile or rhythmic activity' manifested by all living matter."

Glasgow

[1] Le Progrès Médical, Jan. 8th, 1898.

[2] Cheyne-Stokes Respiration (Edinburgh, 1892).

[1] Proceedings of the Medical Society of London, 1888, p. 41.

THE DIASTOLIC MURMUR OF MITRAL STENOSIS.

BY G. BERTRAM HUNT, M.D., M.R.C.P. LOND.,
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IT is generally recognised that, as stated by Bristowe,[1] the murmur of mitral stenosis may be early, middle, or late diastolic; but the clinical significance of the variation in time of these murmurs is practically unknown; and it was the attempt to discover wherein cases with the early and middle diastolic murmur differed from those with the more ordinary presystolic murmur which led me to examine a series of cases of mitral stenosis. From clinical examination of a considerable number of cases I have arrived at the following conclusions, in support of which I am unable to give figures, but they will probably be found to agree with the experience of most.

1. The murmur in an early compensated case of mitral stenosis, such as is seen in the out-patient room and often discovered only on routine examination, is always presystolic. Early diastolic murmurs are practically never heard while compensation remains good.

2. On the other hand, when cardiac failure supervenes and the patient is troubled with dropsy, cyanosis, and other symptoms of mitral stenosis, the murmur is frequently heard in the first half of diastole, although even now it is not so common as the presystolic murmur. (A long diastolic murmur running right up to the thrust and increasing in loudness and roughness as it approaches the systole is included as a variety of the presystolic murmur.)

3. A presystolic murmur may or may not be accompanied by a systolic bruit, but an early diastolic murmur is almost always preceded by a systolic murmur. A single, early diastolic murmur at the apex is very rare in mitral stenosis and strongly suggests aortic regurgitation even if no murmur is heard at the base.

4. A presystolic murmur frequently changes into a diastolic murmur or *vice versâ* in a short time and the period of diastole occupied by the murmur may even vary in the erect and recumbent postures. The difference in the cause of these murmurs is therefore not likely to be found in any structural condition of the affected valves, but rather in the way in which the heart is working at different times.

I have examined the records of University College Hospital for the past few years in order to see if in the fatal cases of mitral stenosis any post-mortem differences could be substantiated between the hearts of those in which during life the murmur was presystolic and those in which it was in the first part of the diastole. Such cases are not easy to collect, as it is frequently found in mitral stenosis that before death there may be no murmur or it may be confined to the systole, so that unless the case is under observation for some time it may be useless for this purpose. I have, however, collected 21 suitable cases of well-marked mitral stenosis with necropsies.

In 15 cases there was either during life a presystolic murmur or a very long murmur running up to the thrust. In 12 of these the left ventricle was either small, normal in size, or slightly hypertrophied without dilatation; in two the left ventricle was slightly dilated; and in one patient who died, not from the cardiac condition, but from septicæmia, it

was considerably dilated. In six cases the murmur was in the first part of the diastole and in every one of these the left ventricle was found to be markedly dilated and usually also hypertrophied. So it seems that the early diastolic murmur is heard in those cases of mitral stenosis in which the left ventricle is dilated. Now, in mitral stenosis alone the left ventricle does not dilate; it may either become smaller, as it receives less blood, or it may become slightly hypertrophied, possibly to increase its suction power, as suggested by Giuffré.[2] If with mitral stenosis we find distinct left ventricular dilatation we may be sure, excluding other valvular or visceral disease, that during life there was considerable mitral regurgitation, in which condition dilatation is of course frequent. This great frequency of dilatation of the left ventricle in cases of mitral stenosis with early diastolic murmur, together with the clinical association of such murmurs with systolic bruits, and the fact that this murmur is only heard when compensation is failing, leads to the conclusion that the murmur in the first part of the diastole is only heard in cases of mitral stenosis in which there is free mitral regurgitation. The objection might be raised that with the rigid and useless valves of mitral stenosis there must be very frequently regurgitation and that the early diastolic murmur should be therefore more common. But there are frequently no signs during life or after death that regurgitation has taken place and, as suggested by Samways,[3] this may be due to hypertrophy of the left auricle which, until it gives way, prevents by its more forcible contraction any great mitral regurgitation. The rapid changes in the time of the murmur of stenosis may be due to alterations in tone of the muscle of the left auricle and auriculo-ventricular ring, allowing greater or less regurgitation.

Although there have been no suggestions as to the significance of the early diastolic as compared with the presystolic murmur, yet there are several explanations as to the mode in which it is produced. There is the view supported by Fagge[4] that it is caused by an increased duration of the auricular systole, so that it drives the blood through the narrowed orifice as soon as the ventricle dilates. Apart from the difficulty of conceiving such a cardiac rhythm on physiological grounds there is the obvious objection that such murmurs are very frequently heard with, but separated from, presystolic murmurs which would be most unlikely if they were both due to the auricular contraction. Balfour[5] ascribes this murmur to the high tension in the pulmonary system forcing blood through the narrow mitral orifice to fill the left ventricle as soon as it is emptied. If this were sufficient by itself to produce a bruit we should expect an early diastolic murmur in all advanced cases of mitral stenosis until the right side gives way, relieving the high pulmonary pressure, whereas such murmurs are only heard in a minority of cases. There is also the attractive theory put forward by Rolleston[6] and adopted by Gibson[7] and others that the early diastolic murmur is due to the negative pressure in the expanding left ventricle sucking blood through the constricted orifice. If the early diastolic murmur is associated with a dilated left ventricle, as appears from my analysis of post-mortem examinations, which unfortunately includes only a small number of cases, it can hardly be explained by this *vis a fronte*. For even if we suppose the wall of the left ventricle to remain of the same thickness and elasticity when the cavity is dilated there would be as a question of physics less negative pressure within it; and as the wall of a dilated ventricle is always softer and less elastic, this loss of negative pressure would be increased. Also, as shown by Roy and Adami,[8] a dilated heart does not thoroughly empty itself and this, again, would diminish its suction-power. So that if, as I have endeavoured to show, cases with early diastolic murmur have a dilated left ventricle the murmur cannot be explained by the negative intra-ventricular pressure, as this would be considerably less in such hearts than in those with a left ventricle of normal size. Another great objection to all these views is that they make no attempt to explain why the murmur should only occasionally be in the early part of the diastole, as such causes would be equally potent in all cases of stenosis. There is, lastly, the explanation put forward by Petit[9] that the diastolic murmur is only heard when the heart is beating slowly, as then the ventricular systole being more complete the left ventricle is better emptied, and there is therefore a more energetic flow of blood into the ventricle at the beginning of diastole, producing a murmur immediately after the second sound. This connexion between the early diastolic murmur and a slow strongly-beating heart is, however, quite disproved, as mentioned before, by clinical examination, the murmur being rather heard with a failing heart.

For these reasons it seems to me that the suggested causes of this murmur in the early half of the diastole are insufficient. If, as I suggest, this early diastolic murmur is always associated with free mitral regurgitation the explanation is simple. The ventricular systole drives a certain quantity of blood back through the constricted orifice into the already over-distended left auricle and pulmonary veins, and at the beginning of diastole these cavities by their elastic recoil drive some of the blood back through the narrowed mitral valve, thus producing the murmur.

This view of the dependence of the early diastolic murmur of mitral stenosis on co-existing regurgitation thus seems to be supported by some clinical and post-mortem evidence; it affords a simple solution of the mechanism of this rather obscure murmur and also explains why it is only heard in a certain number of cases of mitral stenosis.

Gower-street, W.C.

[2] Giuffré: Cinquième Congrès de la Société Italienne de Médecine, Octobre, 1892.
[3] Brit. Med. Jour., vol. i., 1897, p. 200.
[4] Text-book of Medicine, vol. ii., p. 74.
[5] Diseases of the Heart, third edition, p. 132.
[6] St. Bartholomew's Hospital Reports, 1888, p. 200.
[7] Diseases of the Heart, p. 532.
[8] Philosophical Transactions, 1892.

THE ACTION OF THE WATER OF LLANGAMMARCH WELLS ON URIC ACID.

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AND
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THE well-known efficacy of waters containing salts of the alkaline earths in the treatment of lithæmia has induced us to record the following observations on the water of Llangammarch Wells which contains the chlorides of barium and calcium in solution.

A man, aged 66 years, who had suffered for many years from symptoms of renal calculus, consulted one of us (Dr. W. Black Jones) in September, 1896. For the past 10 years he had been taking Contrexéville and Wildungen waters, but without relief. In 1895 he began taking the water of Llangammarch Wells, but in the following year was still suffering from the same symptoms. His urine was acid and the specific gravity was 1020. There was no albumin or sugar present, but he passed a large quantity of uric acid crystals. He suffered from obscure pains in the abdomen and had also well-marked signs of osteo-arthritis in the right knee and in the phalanges of the fingers. In May, 1897, he consulted Dr. Lauder Brunton who reported that all the symptoms of calculus had disappeared. Since then his urine has been free from deposit of uric acid, his rheumatism is much better, and his health is generally improved. He has continued to take a glass of Llangammarch Wells water daily.

The success of the above case induced one of us (Mr. Edward Russell) to make the following series of experiments upon himself. As a preliminary the alkalinity of the following waters was tested with a decinormal solution of hydrochloric acid, 20 cubic centimetres of the water being used in each case. It was found that distilled water was neutralised by 0·1 cubic centimetre of acid, tap water (New River) by 0·8 cubic centimetre, and the Llangammarch Wells water by 0·36 cubic centimetre. The direct action of the above waters on uric acid was then tested in the following manner. 250 cubic centimetres of the water with about one gramme of powdered uric acid were kept at 100° F. in a bath for some hours; 20 cubic centimetres of the solution were then taken, filtered, and treated with standard solution of permanganate of potassium. The results, which are denoted by the amount

[9] Charcot's Traité de Médecine, vol. v., p. 250.

of solution of permanganate of potassium used, were as follows:—

Distilled water	2·4	cubic centimetres.
Tap water	12·3	,, ,,
Llangammarch Wells water ...	6·6	,, ,,

The amount of uric acid voided in the urine was estimated as follows: 100 cubic centimetres of urine were mixed with 30 grammes of chloride of ammonium. This solution was allowed to stand for two hours, being frequently stirred, and was then filtered and washed with a saturated solution of sulphate of ammonium; the precipitate was washed off the filter-paper and after adding 20 cubic centimetres of sulphuric acid it was titrated with a standard solution of permanganate of potassium by Hopkins's method.

The experimenter at this time was suffering from obscure pains in the lumbar region and was passing rather less urine than normal, with a heavy deposit of urates. He was drinking about two and a half pints of liquid per diem, chiefly tea and New River water. He was taking a moderate meat diet. After a fortnight's dieting about two and a half pints of urine were passed in 24 hours the specific gravity of which was 1030. The reaction was acid and on analysis there was found to be 0·058 gramme of uric acid per 100 cubic centimetres. A glass of the Llangammarch Wells water was then substituted for the New River water. This was taken twice daily before meals, very little other liquid being taken. This diet was continued for a fortnight. It was then found that three and a quarter pints of urine were passed in 24 hours, the specific gravity of which was 1022, and 0·066 gramme of uric acid was passed per 100 cubic centimetres. After the mineral water had been discontinued for a fortnight two and a quarter pints were passed per diem, the uric acid amounting to 0·09 gramme per 100 cubic centimetres. The results are expressed in the following table.

TABLE I.

Diet.	Amount of urine in cubic centimetres.	Increase per cent.	Amount of uric acid in grammes.	Increase per cent.
1. Normal	1440	—	0·83	—
2. Mineral water	1900	31	1·25	50
3. Normal	1300	—	1·18	42

In each of the above cases the results represent a mean of two analyses.

A second series of experiments was then conducted, the urine being analysed while a normal diet was being taken and again after a mineral water diet of six days' duration. The results were as follows:—

TABLE II.

Diet.	Amount of urine in cubic centimetres.	Increase per cent.	Amount of uric acid in grammes.	Increase per cent.
1. Normal	1130	—	1·03	—
2. Mineral water	1530	35	1·34	30

We conclude from the above observations that the effect of substituting the Llangammarch Wells water for ordinary water is to increase the quantity of urine passed and also to increase the output of uric acid. This increase of the latter is also maintained to a certain extent when the water is no longer taken, but gradually returns to the normal for that individual.

The relation of uric acid to the various manifestations of gout and its deposition in the kidney in the form of calculus has been studied during recent years by several eminent members of the medical profession who have contributed much to our information on the subject. Considerable advances have been made in our knowledge as to its circulation in the blood and the factors determining its deposition in the tissues. The influences affecting its elimination from the body are, however, less well known to us. Many attempts have been made to discover a solvent of uric acid, but these experiments have not as yet been successful. Several mineral waters have long enjoyed a repute in the treatment of this diathesis, but most of them do not act as solvents at all, their action being chiefly diuretic. Some of the well-known waters would even seem to be contra-indicated on chemical grounds, although clinically the results are good. According to an analysis of Contrexéville water, for example, sulphate of calcium is the only mineral ingredient occurring in any important quantity in this water.

In the above experiments it will be noticed that chemically tap water is a better solvent of uric acid than Llangammarch Wells water, yet when the latter was substituted for the former clinically there was an increase of the output of from 30 to 50 per cent. It will be observed that the increased diuresis was due to the action of the mineral water alone, as the same quantity of liquids was taken in each case. The action of the Llangammarch Wells water in eliminating uric acid has thus an important bearing on the treatment of chronic gout and allied diseases. The following evidence gives the results of its employment in such cases. A number of patients visit Llangammarch annually suffering from gouty swellings of the joints. After a course of mineral water in nearly every case there is considerable benefit, the swellings decrease, there is less pain, and there is less stiffness in the joint. In many cases baths of the mineral water and also massage are used with very good results. In a few instances which at first appeared most unpromising considerable relief has been obtained. In the same manner there has been success in the treatment of osteo-arthritis. We therefore consider that in the Llangammarch Wells water we have a valuable adjunct to the present treatment of the uric acid diathesis, that substance being eliminated in considerable amount, hence this water is indicated in cases of gout, osteo-arthritis, uric acid, gravel, and calculus. In addition to the mineral water treatment there are at Llangammarch the advantages of a spa within a few hours' journey from London, together with a mountain atmosphere and such various forms of exercise as walking, hill-climbing, golf, &c., which are invaluable aids to the balneologist.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A NOTE ON DIAPHRAGMATIC PLEURISY.

BY GEORGE A. CLARKSON, F.R.C.S. ENG.

THE subject of diaphragmatic pleurisy is of exceptional interest to the surgeon on account of the symptoms being so very suggestive of some grave abdominal affection. The differential diagnosis is generally far from easy, for few signs, if any, are discoverable on the most careful examination and in the majority of cases no effusion follows. The most striking symptom is severe pain in the upper part of the abdomen. The diaphragm is fixed and the abdominal walls consequently do not move on respiration. The respiration is quickened and expansion is confined to the upper part of the thorax. There is generally some accompanying fever. Coupled with these symptoms is one of the most marked features in the disease, an extremely anxious countenance. The expression is such as one is accustomed to see in bad abdominal lesions. Some cases of pneumonia present this train of symptoms at the onset and I suppose that there can be no doubt that this is due to the presence of diaphragmatic pleurisy. The following case which came under my care illustrates in a striking manner most of these points.

Late one evening I was asked to see a boy, aged 11 years, whose mother gave me the following history. He had been perfectly well in the middle of the day when he came home to dinner and partook of a good meal. He then went out to play with some other boys and returned home ill and evidently in great pain. When I examined him there were no bruises or any signs whatever of injury on the body and no broken ribs. He complained of acute pain in the abdomen and lay on his back with his knees drawn up. The abdomen was somewhat distended, motionless, and very rigid. It was tender on

pressure, but the tenderness was general and not localised to any one part. The breathing was moderately rapid, the upper part of the chest only being used. Nothing abnormal could be detected in the chest. The temperature was 102° F. and the pulse was 125 per minute. The boy's general aspect was one of pain and anxiety. As I was by no means clear in my mind as to the cause of these symptoms I awaited further developments The following morning the boy was about the same but the abdominal symptoms were not so marked. There was less rigidity of the abdominal muscles and the knees were at times extended. The temperature was higher (103°) and the breathing was more rapid. In the evening fine crepitations could be heard at the base of the right lung and the case ran the usual course of one of lobar pneumonia. On the third day after the onset the abdominal symptoms had quite disappeared. The patient made an uneventful recovery.

I have had the opportunity of seeing a similar case of an adult exhibiting the same apparently acute abdominal symptoms which gradually gave way as the physical signs of pneumonia manifested themselves.

Leicester.

SARCOMA OF THE FEMUR.

BY FRANK A. ARNOLD, M.B. LOND.

THE following notes of a case of sarcoma of the femur may interest those who study the pathology of disease in people other than Europeans.

A young adult native was admitted into the Memorial Hospital, Bulawayo, on Oct. 15th, 1898, suffering from a large swelling over the lower third of the left femur. He stated that he first noticed that his thigh was swollen at Christmas, 1897, and that the swelling had since steadily increased. On admission a large tense tumour was found over the lower third of the femur, attached to both the bone and the skin. There was no fluctuation. The skin was broken for an area of about the size of a half-crown and the wound so formed was very foul. The swelling was about six inches across at its widest diameter and was fairly well defined and rounded. It was very painful but not tender to the touch. The veins of the skin over the swelling were not much enlarged. The glands of the groin were not more enlarged than would be accounted for by the skin wound. The "boy" had been picked up on the veldt and was weak although not emaciated. Examination showed no affection of any other part of his body. Amputation at the upper third was at once performed. Three days later the patient complained of pain in the right lung and he had a cough and slight hæmoptysis. Examination revealed crepitations all over the front of the right chest but no appreciable dulness. The pain was very great. The chest symptoms became more marked and in about 10 days definite dulness over the lower lobe of the right lung could be made out and from this time onward the signs of lung affection became more and more marked. The superficial veins of the body became enlarged and the face and neck, especially on the right side, became œdematous. There was no ascites. The patient died on Feb. 12th, 1899.

Examination of the amputated thigh showed that the growth had started inside the shaft of the bone at its junction with the condyles and had eaten through the anterior surface of the femur, splitting off the internal condyle from the rest of the bone. Hæmorrhage had taken place into the centre of the growth which was well defined except at the junction with the bone and the point where the overlying and adherent skin had given way. The post-mortem examination showed that the bases of both lungs and the mediastinal glands were occupied by a firm white secondary deposit. Elsewhere both lungs were studded with white isolated patches, some rounded and dimpled and others large, irregular, and undergoing cystic degeneration. Only small areas of healthy lung tissue were to be found in either lung. All the other organs of the body were healthy as was also the bone with the marrow of the stump. Microscopical examination showed the original growth in the femur to be a myeloid sarcoma and the secondary growth a spindle-celled sarcoma.

The point of interest in this case is that it shows that a malignant growth in a native may be identical in its origin, progress, and structure with a similar growth in Europeans. The "boy" was assumed to belong to the Zulu tribe. Although his skin was somewhat lighter in colour than is usual I do not think that either of his parents was a European. It is possible that there was a strain of European blood in the patient but if so it must have occurred two or three generations back.

Memorial Hospital, Bulawayo, South Africa.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

ST. MARY'S HOSPITAL.

A CASE OF PERFORATION OF GASTRIC ULCER; OPERATION; RECOVERY.

(Under the care of Dr. SIDNEY PHILLIPS and Mr. A. QUARRY SILCOCK.)

THE following case presents several features of interest. In the first place, 33 hours elapsed from the time at which the perforation occurred to the time of operation and yet the patient recovered, and this successful result cannot be attributed to the absence of the gastric contents for only an hour previously to the perforation she had partaken of a meal and peptonised milk was given even later. The fortunate issue must be ascribable in part to the smallness of the aperture of perforation and the rapid formation of peritoneal adhesions. We have on several recent occasions pointed out the rarity of a successful result in perforation of the stomach when more than 24 hours have elapsed between the perforation and the operation. This case also illustrates the great value of a gauze drain, for its presence rendered harmless the failure of the first attempt at closure of the perforation. The occurrence of parotitis in abdominal cases is always of interest and Mr. Silcock's suggestion as to the cause of this complication is very ingenious and may serve to explain many at least of the cases, if not all. We consider his recommendations as to the prophylactic treatment to be well worthy of trial.

A girl, aged 20 years, had in September, 1896, an attack of pain in the upper part of the abdomen with vomiting and kept her bed a week; since then she had been subject about every three months to attacks of the same character but of less severity and without vomiting. Between the attacks she had been free from pain and had not restricted her diet in any way. She had an attack in February, 1898, and one in May of the same year. There had never been any hæmatemesis. The attacks were regarded as hysterical. She was unusually well during August and until Sept. 14th, 1898; on the 13th she ate a raw apple as she had frequently done before and had no discomfort after it. On the 14th she ate breakfast as usual and at 11 A.M. she took some cocoa and bread and butter; one hour later she experienced severe pain in the upper part of the abdomen and lay down on the floor. Soon afterwards she vomited. Dr. A. B. Rendel, who saw her in the afternoon, found her somewhat collapsed, and he had a bed made up for her in the room where she was taken ill. She had peptonised milk and ice to take. The evening temperature was 100° F.; during the night there was pain in the abdomen and shoulders and she vomited twice. She was sent to St. Mary's Hospital on the 15th at 5 P.M. Dr. Phillips saw her at 7 P.M. She was a well-nourished, healthy-looking girl. The face was flushed, there were slight dark areolæ under the eyes, the features were a little pinched, the tongue was clean, abdominal movements were a little restrained, and there was hyperæsthesia over the whole abdominal surface. She complained of pain in the right iliac fossa, but there were no dulness on percussion, no tumour, and no tenderness in this region; there was, however, acute tenderness over an area of about two square inches immediately to the left of the linea alba just above the level of the umbilicus; here there was more resistance than elsewhere and slight defect in percussion resonance. Liver dulness could be mapped out in

the margin of the thorax. No stomach note could be obtained except in the region of the left axillary line; there was no bell sound obtainable. The pulse was 120, very sudden and jerky, and the temperature was 100·2°. She had vomited just before admission.

Remarks by Dr. SIDNEY PHILLIPS.—The sudden acute abdominal pain, collapse, and vomiting, with subsequent pyrexia, pointed to a perforation of some part of the alimentary canal. The pain was felt in the iliac fossa, but pain is of little value as a localising symptom in acute abdominal disease, and in the absence of tenderness, tumour, percussion dulness, or undue resistance in the right iliac region appendicitis was negatived. The local tenderness and the tension of the left rectus muscle suggested that the lesion was in the situation of the stomach and the symptoms pointed so strongly to a perforation that the pre-existence of an ulcer of the stomach seemed certain though the history of paroxysmal attacks of pain with intermissions of many weeks was unlike the course of ulcer as generally described; the intensity and localisation of the tenderness pointed to its being on the anterior surface. There was no encroachment on the liver dulness and a stomach note could be obtained in the axillary line; the stomach therefore was not entirely empty of gas nor was there any evidence of widespread escape of gas into the peritoneal cavity. Perforation of the stomach may, no doubt, be recovered from, but that is most likely when the stomach is empty or where there are previous adhesions; in this case the stomach contained liquid at the time of the perforation and afterwards. The fever, the quick pulse, and the flush of the patient's face made the presence of peritonitis certain and the general condition would, I felt sure, rapidly become worse. I therefore sent at once to ask my colleague, Mr. Silcock, to operate and after a little delay in obtaining the consent of the mother the girl was brought into the operating theatre at 9 P.M. I noticed immediately before the operation that the physical signs had somewhat changed and that there was hyper-resonance over part of the right hypochondrium. The notes were taken by Mr. W. Ferris, my clinical clerk.

Operation.—At 9 P.M., ether being administered, an incision two and a half inches long was made by Mr. Silcock a little below the xiphoid cartilage in the linea alba; the structures of the abdominal wall were divided, the subcutaneous fat being thick. Recent adhesions of lymph were found in all directions on opening the peritoneum. The wound was now lengthened and a horizontal cut was made to the left side for one and a half inches. A good deal of serum escaped, and upon examination a small perforation was found a little to the left of the linea alba in the lower part of the anterior wall of the stomach, through which escaped a small quantity of frothy mucus. The surrounding peritoneum was covered with soft adhesive lymph. After cleansing the wound several unsuccessful attempts were made to close the perforation by invaginating its edges and stitching with Lembert's sutures, failure being due partly to the difficulty of passing sutures at the bottom of a deep wound with the left lobe of the liver overhanging the perforation, and partly to the stitches cutting through the softened tissues. However, by the aid of long rectangular cleft palate needles and silk sutures this was ultimately effected. The wound was washed out with sterilised water, the greater part of the vertical parietal incision was closed with silkworm gut sutures, and a large double cyanide gauze drain and dressing were applied. The operation lasted one and a half hours. The patient passed a quiet night; there was not much pain and no sickness. On the 16th the temperature at 10 A.M. rose to 101°. Enemata of three ounces of peptonised milk or beef tea with brandy were given every four hours. The wound was dressed in the afternoon and brown biliary fluid was found on the dressings. Soon afterwards a greenish fluid was vomited, with escape of thick green acid fluid from the wound. On the 17th she was better: the temperature was from 100° to 102°. There was a copious greenish discharge; the sutures had evidently given way, and by the aid of an electric lamp the perforation could be seen at the bottom of the wound. On the 18th the maximum temperature was 101°. The wound was irrigated with boric acid lotion and plugged with cyanide gauze wrung out in a solution of bicarbonate of soda. On the 19th there was acute pain with tenderness and swelling of the left parotid gland, the temperature rising to 102°. Belladonna fomentations were applied, and acid drops were ordered to be sucked to stimulate the flow of saliva; the nutrient enemata were well retained. She had one-eighth of a grain of acetate of morphia, but did not sleep well. On the 20th the parotitis was less acute. Relief was afforded by the application of dry heat by means of a Japanese muff warmer. The temperature was from 101·6° to 102°. A bile-stained discharge was still present. On the 21st the maximum temperature was 101°. The discharge was offensive. Iodoform gauze plugging was substituted for the cyanide. On the 22nd the temperature was 100·4°. There was dulness with some tenderness in the left hypochondrium, and Mr. Silcock passed a long probe from the wound towards the left into a cavity from which the offensive discharge could be seen to flow, and decided to at once make a counter opening. Under an anæsthetic the wound was well irrigated. A counter-opening by a horizontal incision one and a half inches long was made in the eighth left costal space: a large drainage tube was then passed from one wound to the other and the cavity was again irrigated. The little finger inserted through the perforation detected no signs of ulceration of the surrounding mucous membrane. With some difficulty the edges of the perforation were invaginated and approximated by three Lembert's sutures. The sutures were deeply passed and must have included nearly the whole thickness of the gastric wall. The wound was plugged lightly with cyanide gauze and a dressing was applied. The patient recovered from the anæsthetic without sickness. The temperature rose to 104° in the afternoon and fell to 102° by night. The wound was dressed at night; it was less offensive and there was no discharge from the stomach. On the 23rd the maximum temperature was 100·6°. The discharge was still offensive, but none came from the stomach. All parts of the wound were covered with healthy granulations. On the 24th she took food by the mouth for the first time, three drachms of sweetened barley water being allowed every two hours. There was no leakage from the stomach. From this time forward the patient made an uninterrupted recovery. On Nov. 21st she got up, the wounds being practically closed, and was discharged to a convalescent home on Dec. 14th.

Remarks by Mr. SILCOCK.—We are much indebted to Dr. W. C. Wood, house surgeon, for the careful surgical notes of the case. The failure to effect permanent closure of the perforation at the first operation and the success attending the second show how unnecessary it is, as often has been insisted, to do more than provide for the exit of the extravasated stomach contents from the peritoneal cavity, where that is possible, in cases in which the complete operation would from its complexity or long duration endanger life. The occurrence of parotitis in abdominal cases is not infrequent. May it not be due to the fact that such patients often enough suffer from stomatitis, for but little food is taken and that fluid in kind, or possibly none may be allowed, as in our case: the mucous membrane thus becomes fouled, there is no stimulus to the flow of saliva, consequently infective organisms may find their way up the parotid or other salivary duct, the current of fluid in which may be materially lessened in force and volume. Hence it is well to see that the mouth and teeth are cleansed, and possibly it may be a good thing to allow the patient to stimulate the flow of saliva by some such means as that adopted in our case. The patient reported herself in January, 1899, as perfectly well.

WEST OF ENGLAND EYE INFIRMARY, EXETER.—The foundation-stone of the new building of this institution will be laid by Mr. George Franklin, J.P., on April 11th. Up to the present £7541 have been received towards the building fund, but further donations are much needed.

LITERARY INTELLIGENCE. — Messrs. Williams and Norgate's book circular for March includes the following recent publications:—"Untersuchungen über Strukturen, insbesondere über nichtzellige Erzeugnisse des Organismus," by O. Bütschli; "Grundriss einer Geschichte der Naturwissenschaften," vol. ii., by F. Dannemann; "Die Masken und Geheimbünde Afrikas," by L. Frobenius; "Geschichte der Wiener Universität von 1848–98"; "Technisches Wörterbuch in Vier Sprachen" (English, Italian, German, French), by E. Webber; "Leçons de Clinique Surgicale," by P. Delbet; "Handbuch der Toxikologie," by Professor A. J. Kunkel; "Lehrbuch der Speziellen Chirurgie," by H. Tillmann; and "Das Becken mit besonderer Berücksichtigung der Chirurgie und Gynäkologie," by Professor W. Waldeyer.

Medical Societies.

PATHOLOGICAL SOCIETY OF LONDON.

Experiments on the Toxicity of Urine.—Epithelial Tumours of the Eyebrow.—Diffuse Syphilitic Change in the Liver.—Exhibition of Specimens.

A MEETING of this society was held on March 21st, Dr. CHARLEWOOD TURNER, Vice-President, being in the chair.

Dr. HERRINGHAM gave an account of a series of Experiments upon the Toxicity of Urine. He recalled the fact that since disease of the kidneys had been known to be a cause of death this effect and the general group of symptoms to which the name "uræmia" was given had been till recent years universally, and were still commonly, believed to be due to the retention of waste products. Recently uræmia had been explained by the loss or perversion of an internal secretion, but the evidence for this was as yet insufficient. No definite poisonous constituent of the urine had been demonstrated in uræmia. Urea, uric acid, and all the known organic bodies which the urine contained had been injected into the circulation in excessive quantities without producing the symptoms. In default of any satisfactory explanation by these means pathologists had been driven to other theories—first, that of cerebral œdema championed by Traube; secondly, theories which ascribed uræmia, not to a constituent of the natural urine, but either to a body produced by decomposition of the retained urine within the body, such as Frerich's ammonium carbonate, or more recently to a precursor of urea, such as the salts of carbamic acid, which were put forward by Nencki and others on experimental evidence. Fresh light was thrown on the subject by the experiments of Feltz and Ritter in France and Astachewsky in Russia who in 1881 injected considerable quantities of urine itself into the circulation in dogs. They ascribed the fatal effects of these injections chiefly, or even entirely, to the potash salts. Their experiments were repeated by Bouchard of Paris who denied the sufficiency of the potash salts on several grounds, ascribed a partial toxicity by a kind of division of labour to all the constituents of the urine, and supposed that seven different poisons existed in the urine, each productive of a special symptom. Bouchard further found the urine of sleep less toxic than that of day and more convulsant in its effect and was led to form a theory of sleep, according to which men by day secreted a body possessed of narcotic properties which by its accumulation induced sleep, while during sleep this gave place to another substance of a convulsant nature which by inducing muscular movements led to waking. Dr. Herringham had been engaged during the last three years in repeating these experiments and during the same time Beck in Germany had been similarly occupied. Their conclusions so far as their work had overlapped were similar. Bouchard's statements rested upon no chemical analysis, but upon physiological symptoms alone. He had produced not one of the bodies whose presence he asserted, and had not even observed the presence or variation of those bodies known to exist in the urine. For instance, while denying the sufficiency of potash salts he gave no quantitative analysis of the amount contained in the urines injected. Furthermore, in many respects neither Beck nor Dr. Herringham were able to confirm his account. The urine of sleep, for instance, was not in their experience more convulsant than that of day. Thirdly, the variation of rabbits, which were the animals upon which Bouchard experimented, was so great that the differences upon which Bouchard relied were within the error thus caused. Dr. Herringham had endeavoured carefully to observe the symptoms induced in rabbits by these injections and then to compare by quantitative analysis the variation of different constituents of the urine. By this means he reached the conclusion that none of the constituent bodies but potash varied with the toxicity of the urine, and after making a necessary modification of the classical method of potash analysis in urine he was able to show so close a parallel between these two that he had no doubt that potash was the only cause of the fatal result. In every instance there was sufficient, and in nearly all much more than sufficient, potash to produce death. The lesser toxicity of the urine of sheep was simply owing to a lesser excretion of potash. Diagrams were exhibited to show the relation of various other urinary constituents and of potash and also illustrated the extent of variation in rabbits as evidenced by cases in which a pair of rabbits had been treated with the same sample of urine. The difference between the two animals was never less than 6 per cent. and ran up to 52 per cent. The symptoms of animals thus injected were myosis, drowsiness, lowering of blood-pressure from cardiac failure, retardation and embarrassment of respiration, loss of body heat, and finally fatal convulsions. The resemblance of these to uræmia was evident but no conclusion could be drawn thence until clinical investigation had followed up the suggestions of experiment. Since the degree of the urinary toxicity was merely an inexact way of stating the amount of potash salts, injection experiments on animals could not take the place of quantitative chemical analysis. Bouchard had laid down a standard of excretion for the normal man, but Dr. Herringham had found the normal to vary under ordinary conditions (and much more under conditions of light diet and rest in bed) too greatly to admit of any useful comparison in disease unless by a long series of observations on each patient. Isolated estimations were quite valueless. Lastly, Bouchard had rested his theory of auto-intoxication in general largely upon the conclusions derived from urinary toxicity. Auto-intoxication was a word of confused meaning, comprising, firstly, cases of perversion or loss of the internal secretion of a gland; secondly, cases of perverted metabolism during primary or intestinal digestion, with absorption of the abnormal products; and, thirdly, similar processes occurring during the hepatic or even during later stages of assimilation. The only proved instance of the first class was that of the thyroid; the second and third were purely hypothetical. Urinary toxicity being due to potash salts could not lend support to the use of the term auto-intoxication under any of these three meanings.—Dr. CHARLEWOOD TURNER observed that in uræmia there was not merely retention of substances, but a condition in which the secreting substance of the kidney was altered, and the production of urinary ingredients was interfered with so that the natural secretion failed to be performed. The conditions in experimental injection of urine into the veins of animals were not the same as those in the production of uræmia, as the blood received the poisons suddenly instead of gradually. He still thought that the symptoms of obstruction did not quite correspond with those of suppression. So far as the cause of the toxicity of urine injected into animals was concerned Dr. Herringham's experiments appeared to be decisive.—Dr. ROSE BRADFORD confirmed the description given of the train of symptoms which followed the injection of urine into the circulation of animals. If Bouchard's theory were correct the urine in uræmia should have lost its toxicity, but this was not the case. Dr. Bradford did not think that there was any one cause for uræmia, as it was not due to the retention of any one constituent of the urine. No one had succeeded experimentally in producing uræmia by excising the kidneys or ligaturing the ureter, these producing the condition described by Sir William Roberts under the term "obstructive suppression," symptoms which he could not agree with Dr. Herringham in regarding as the same as those of uræmia due to structural disease of the kidney. He mentioned a case which he published in which there was necrosis of the cortex of both kidneys in which the patient lived a week, passing only about two drachms of urine, but there was clearness of mind up to the end, the symptoms being those of calculous suppression.—Dr. HERRINGHAM, in reply, said that he had been careful to avoid suggesting that the conditions in man were the same as those in the rabbit. He had not intended to infer that uræmia in man was due to retention of potash salts, but he thought that he had proved that the presence of potash salts was the cause of the toxicity of the urine when injected into the veins of an animal.

Dr. RADCLIFFE CROCKER read the account of a case of Multiple Tumours arranged in a Vertical Band from the right eyebrow to the hair margin in a girl aged 10 years. They had been developing six years, apparently as the result of a slight injury. They were convex, pale red, and varied in size from that of a hempseed to that of a half of a damson and gave no inconvenience. Structurally the growth was deep in the corium, composed of small epithelial cells in lobules separated by fibrous septa, with the appearance of a rodent ulcer. Their development could be distinctly traced from several ducts and hair follicles. The sebaceous glands were absent or rudimentary and could not be proved to take any

part in the tumours, as there were no intermediate stages. Dr. Crocker suggested that the tumours were derived from the embryonically defective appendages of the skin and probably were excited by a blow on the forehead.—Mr. RAYMOND JOHNSON showed sections from a similar specimen removed from the shoulder of an adult woman, where it formed a flat elevation. It was covered by epidermis. It consisted of masses of epithelial growth closely resembling the appearances in rodent ulcers. He also referred to a similar specimen removed from the buttock.

Dr. F. PARKES WEBER showed Sections from the Liver of a man, aged 47 years, the subject of advanced tertiary syphilitic disease of the testes, &c., who died from cerebral hæmorrhage. The liver was somewhat enlarged (the weight was 67 ounces) and, though it showed no distinct gummata or scars resulting from gummata, presented a diffuse, more or less generalised fibroid change. Microscopic sections showed that this change might be regarded as the result of a "peri-cellular" or "peri-capillary" cirrhotic process such as had been more frequently recorded in connexion with congenital syphilis than with the acquired disease. What Dr. Weber specially drew attention to was a tendency in the present instance and in some analogous cases for the fibrous change to be most advanced in the central portions of the acini and least noticeable around the portal spaces. The best preserved glandular cells were those at the periphery of the acini, precisely those which were most likely to be encroached upon in ordinary cirrhosis. The fact that the inner and middle zones of the acini were the most affected, just as they were in chronic passive congestion and amyloid disease (which latter was absent in the present case) respectively, suggested that the harmful process in diffuse syphilitic disease of the liver was connected rather with the minute branches of the hepatic artery than with those of the portal vein. An analogy might be drawn between the change pointed out by Dr. Weber in the liver and the change observed in some cases of "cardio-sclerosis" when the portions of the myocardium furthest removed from the arterioles were chiefly affected by the fibroid degeneration.

The following card specimens were exhibited:—

Dr. NORMAN DALTON: Two cases of Involvement of the Recurrent Laryngeal Nerve (1) by an Ulcer of the Trachea; and (2) by Calcareous Mediastinal Glands.

Dr. CAMPBELL THOMSON: Secondary Growths of Melanotic Sarcoma in the Small Intestine.

Dr. PARKES WEBER: Lipoma of the Kidney.

Mr. CECIL BEADLES: (1) Spontaneous Rupture of the Heart; and (2) Hæmorrhage into the Suprarenal Body.

Dr. H. D. ROLLESTON: Exulceratio Simplex of the Stomach.

HARVEIAN SOCIETY OF LONDON.

Modern Views on Gout.

A MEETING of this society was held on March 16th, Mr. HENRY JULER, President, being in the chair.

Dr. MOUILLOT read a paper on Modern Views on Gout in Relation to Treatment. He commenced by defining gout as a disease in which uric acid in the form of a quadriurate was present in the blood in recognisable quantities and in which this uric acid was deposited from the blood into the tissues as sodium biurate. This latter compound was only soluble in serum to the extent of one part in 10,000 and in distilled water at blood-heat to the extent of one part in 1000. The formation of uric acid was then discussed at some length, preference being given to the view that it was produced in the liver. It was a clinical fact that excess of animal food and alcohol directly tended to gout. Wines so acted because of their injurious effect on the liver and not on account of their acidity. When excess of animal food and wine went together the greatest injury was done to the metabolic activity of the liver, and the prevalence of acute gout in former times was due to this excess. The symptoms of acute gout needed no description, but in chronic and irregular gout there was much difference of opinion among medical men with respect to the class of patients they called gouty, particularly in the differentiation of gout from rheumatism. Dr. Mouillot's opinion was that gout was a common disease but that rheumatism was rare. He did not say that there was no such thing as rheumatism apart from rheumatic fever, but cases of rheumatic arthritis became fewer as one gained experience. With respect to treatment, colchicum was the drug *par excellence*, because it acted as a powerful stimulant to the liver and intestinal glands, improving the metabolism in the liver and removing by the bowels some of the antecedents of uric acid. Mercury was undoubtedly also called for in most cases of acute gout. Dr. Mouillot had found salicylate of soda unsatisfactory and would probably never use it again. The chief dietetic faults of the gouty were eating too much and drinking too much and also drinking too little. This last fault was a very serious one and was specially noticeable in women and teetotalers. Women had been so often told that in order to retain their figures they must not drink at meals that many approaching middle life drank far too little fluid. The tendency to stoutness which caused women to restrict their allowance of fluid, coming on as it usually did about the same time as the menopause, was a factor which, added to the cessation of the menses, accounted for the great number of mildly gouty women from 45 to 50 years of age. One good meat meal was generally sufficient with vegetables in moderation, whilst at another meal a little fish, with vegetables and fruit in quantity, might be taken. In very bad cases the different types of food should not be habitually taken at the same meal. Wines were best avoided. Vegetarian diet was neither necessary nor desirable except in the rare cases where patients were unable to digest meat. Plain water, Salutaris, Vichy, or Apollinaris should be drunk at 11 A.M. and at bedtime. Too little fluid was a common cause of ill-health. A moderate amount of exercise should be taken daily, but excessive muscular exertion should be avoided. Turkish and other baths should be used regularly. Dr. Luff's work showed the futility of trying to dissolve sodium biurate by alkalies, but at the same time alkalies did have in some cases a beneficial effect on digestion and metabolism, so that if thought desirable lithia or some other alkali could be added to the water that was taken. No reference was made to foreign spas, but Dr. Mouillot said that at the British ones, such as Harrogate, Bath, Buxton, or Strathpeffer, one could not go wrong by placing a patient under the care of a judicious local practitioner who ought to be left in full control of the case. He by no means agreed with Sir William Roberts in condemning waters which contained sodium salts. There was a great similarity between the action of strong sulphur saline waters and that of colchicum. They were both cholagogues and both diminished the output of uric acid. Their beneficial effect on gout was in both cases due to their stimulating influence on the liver and intestinal glands. Dr. Luff claimed for colchicum an indirect solvent effect on uric acid, as by diminishing its amount in the blood it enabled that fluid to take up some which had been deposited in the tissues, and Dr. Mouillot made the same claim for the Harrogate waters on exactly the same grounds.

Dr. BEZLY THORNE said that it had been a pleasure to him to listen to an exposition of views so largely in accordance with his own, while he explained that his own were founded upon personal experience.

Dr. A. P. LUFF urged the importance of avoiding the use of salicylate acid or sodium salicylate in the treatment of gout since it was not only useless but in many cases he had found it do positive harm. He entirely supported Dr. Mouillot's statement that many gouty people drank too little and especially had he found this to be the case with female gouty patients in whom the total amount of daily fluid consumed would frequently average not more than from 18 to 20 ounces. He thought that his investigations on the influence of alkalies on the solubility of gouty deposits had been misunderstood by many medical men. He had never advocated the abandonment of alkalies in the treatment of gout. What he had shown was that alkalies and their congeners were useless when administered with the object of dissolving gouty deposits, but he (Dr. Luff) frequently employed alkalies in the treatment of gouty dyspepsia and of gouty affections of the liver.

Mr. WILLIAM ARMSTRONG, while agreeing with Dr. Mouillot that gout was more frequently met with than rheumatism, thought that there was just now rather a tendency to consider all articular and muscular pains gouty and to under-estimate the rheumatic element which was often of considerable importance from the point of view both of therapeutics and of dietetics. Dr. Luff's valuable work had shown that in cases of persistent gout and goutiness there was almost constant failure to excrete the normal amount of uric acid and he (Mr. Armstrong) had been greatly aided in the diagnosis of doubtful cases by the

estimation of the 24 hours urine by the Gowland-Hopkins method. With regard to dietary as a general rule a certain amount of butcher's meat was necessary; in a considerable number of cases on a non-meat diet he had observed that although the actual amount of uric acid formed got less the rate of excretion diminished to a still greater degree. Beef and mutton certainly stimulated the process of excretion. In nearly 100 cases dieted exclusively on minced beef and hot water there was at first an enormous increase in the quantity of uric acid excreted, which the advocates of a non-meat dietary would say was conveyed into the system by the beef; but as the gouty troubles improved the excretion gradually fell to normal, although there was no change in the diet. In giving red meat to the gouty it was necessary to cut down as far as possible the consumption of carbohydrates and of milk and also to insist upon the drinking of hot water one hour before each meal. Fresh vegetables were of the greatest value, but they should be well cooked and should be freed from crude and indigestible matter. A separate vegetable course at dinner was most useful. Certain gouty cases could be treated with an equal amount of success either on the lines suggested or by the dietary advocated by Dr. Alexander Haig, consisting mainly of carbohydrates, milk, and fruit; but it was of the first importance that the two classes of food should not be mixed as in that direction lay certain disaster for the gouty. Modern researches concerning gout seemed to resolve its treatment into two portions: (1) the prevention of the formation of the antecedents of uric acid by attention to the condition of both gastric and duodenal digestions and to the action of the liver—that much abused organ which was so frequently the victim rather than the culprit; and (2) the stimulation of excretion by attention to the functions of the kidneys, skin, bowels, and nervous system. To a lowered condition of the last named much of the modern irregular gout was due.

Dr. MOUILLOT, in reply, said that he was much interested in Dr. Bezly Thorne's experience. It bore out his view that the initial difficulty in gout was a digestive one and that the gouty were unable to digest the various classes of food at the same meal. The rigidity of the diet rules must be in proportion to the severity of the symptoms, as a sacrifice which it might be worth while making in a severe case might not be so in a mild one. He said that his view was that the true cause of gout was digestive and that the uratic deposits which were responsible for most of the symptoms were due to subsequent failure of the kidneys either as a coincidence or caused by the toxic poisoning due to the uric acid or perhaps some other poison. Dr. Mouillot was quite sure that Mr. Armstrong's practice of calling in the aid of the skin to assist the diuretic action of the Buxton waters was sound and would limit the number of gouty attacks whilst taking the waters.

BRITISH GYNÆCOLOGICAL SOCIETY.

The Germ Theory of Disease, with Special Reference to Gynæcology.

A MEETING of this society was held on March 9th, Dr. MACNAUGHTON-JONES, President, being in the chair.

Dr. GRANVILLE BANTOCK read a paper on the Modern Doctrine of Bacteriology, or the Germ Theory of Disease, with Special Reference to Gynæcology. He defined the modern doctrine of bacteriology as being this—viz., that in the majority of, or as some extremists held all, acute diseases the condition was due to the influence of a specific so-called pathogenic micro-organism. He proceeded to combat this view by propounding the very opposite doctrine, that the presence of these various micro-organisms was the result and not the cause of disease—in other words, that the disease furnished the conditions necessary for the presence of the special micro-organism. He referred to the experiments of Mr. George Stoker on the healing of wounds treated by oxygen gas which led him to the conclusion that in proportion as the staphylococci were numerous and well developed so the healing process progressed. The recent observations of Dr. H. D. Robinson showing that the gonococcus was present in 76 cases of vulvitis in children were quoted in illustration of the view that gonorrhœa was not due to the gonococcus. He criticised Mr. Lockwood's paper on Aseptic and Septic Surgical Cases and maintained that the presence of micro-organisms in the skin did not justify the description of the skin as being "septic." He pointed out, further, that Kopinski in a recent paper in the *Medical Press and Circular* stated that "in healing by first intention both saprophytes and pathogenic micro-organisms were present in the wound." Consequently he regarded the elaborate precautions now adopted in securing antisepsis and asepsis as a superfluous "ritual" which gave no better results than the observance of simple cleanliness. In conclusion, he claimed to have shown that the poisons of variola, vaccinia, and syphilis were not and could not be the product of a bacillus; that Löffler's bacillus was not a constant and therefore could not be the essential element for the production of an attack of diphtheria; that the essential element in the case of gonorrhœa was not the gonococcus; that the essential element in the case of typhoid fever was not the bacillus typhosus and that this bacillus could not live but a few hours in ordinary sewage; that not a single specimen of this bacillus had ever been discovered in sewer air and hence that typhoid fever could not be attributed to it because of its contained germs; that in the cases of the epidemics at Maidstone and King's Lynn there existed no proof of the contamination of the water by typhoidal matter, as indicated by the presence of the bacillus typhosus; that there was no evidence worthy of the name that tuberculosis was due to the ravages of the tubercle bacillus; that the comma bacillus could not be regarded as the essential element in the production of an attack of cholera and that the same could be said of the plague and its special bacillus; that the so-called pathogenic micro-organisms were constantly found under conditions consistent with perfect health and that in more than one notable instance they not only appeared to, but actually did, exert a beneficent influence.

Dr. ALLAN MACFADYEN remarked that it was a unique experience to him to hear such theories as Dr. Bantock had propounded in Lister's country; he had come prepared to listen to, and to take part in, a serious discussion. The experimental research of the last 10 years did not appear to exist for Dr. Bantock nor had he brought forward one word of proof for the statements he had made. It was difficult to appreciate or deal with such an attitude of pure negation and he therefore abandoned any hope of convincing Dr. Bantock. Dr. Bantock had asked, "Where was the germ theory of disease now?" He replied that it stood exactly where it did before Dr. Bantock commenced his attack. He would leave it to the members of the society who were acquainted with the elementary facts of bacteriology to make their own choice as to whom they would follow—Pasteur, Lister, and Koch, or Dr. Bantock. If he were a guest of the society on some future occasion he would be pleased to discuss the questions raised in a more serious fashion than they had listened to that evening.

Mr. GEORGE STOKER said that his position was midway between two extreme views—on the one hand, that all micro-organisms in wounds were bad, and, on the other hand, that none were bad. He believed that some were harmful and some were useful, and in the latter class he included the staphylococcus. He had made observations on over 250 cases of ulcers and in all rapidity of healing was in proportion to the number of staphylococci present. He exemplified his remarks by illustrative cases.

Dr. R. T. HEWLETT said that negative evidence such as Dr. Bantock had adduced was of little value unless overwhelmingly supported. With regard to the Maidstone epidemic Dr. Bantock was hardly fair, for he omitted to mention that from four to six weeks had elapsed between the date of infection and the commencement of the examination; and he ignored other epidemics, such as that at Worthing, where the typhoid bacillus had been isolated from the water. In diphtheria the bacillus could be detected in the membrane in the great majority of cases. The whole cycle of splenic fever could be observed in a lower animal and he could not see that anyone who investigated the matter could escape the conclusion that the bacillus anthracis was the causative agent. With regard to ovariotomy, he would remark that the peritoneum was exceptional and would suffer with impunity a treatment that would not be tolerated by any other serous membrane. Attempts to open the knee-joint without strict antiseptic precautions would end in disaster.

Dr. INGLIS PARSONS regretted that so distinguished a surgeon as Dr. Bantock should hold such erroneous views on pathology. No comparison could be made between a modern hospital like the Samaritan and one of the older hospitals. He instanced the practice of two surgeons when he was a

student; one adopted strict antiseptic precautions and his results were excellent, and the other decried Listerism and had to give up certain operations because of the bad results. Dr. Bantock's practice refuted his theories.

Mr. BOWREMAN JESSETT contended that Dr. Bantock in his former practice of using sulphurous acid in the treatment of stitch abscesses and in his present practice of boiling his silk ligatures practised antisepsis and asepsis. Heat was the best disinfectant they had. Would Dr. Bantock explain why he boiled his silk?

Dr. CLEMENT GODSON thought it would be disastrous if Dr. Bantock's paper had the effect of shaking the faith of midwifery practitioners in the employment of antiseptics. In a Presidential address which he had delivered before that society, he had shown the marvellous change which had taken place in the City of London Lying-in Hospital since the introduction there of corrosive sublimate. Last year among 565 cases there had not been a single case of septicæmia. It would be indeed sad to revert to a mortality of one in 19, which existed when he first became attached to that hospital; and he had no doubt that the change was due to the thorough use of antiseptics.

Dr. MACPHERSON LAWRIE declared himself an adherent of the germ theory of disease. He thought that the address to which Dr. Godson had alluded furnished overwhelming evidence in favour of the antiseptic treatment of disease.

Dr. C. H. F. ROUTH referred to the historical incident of the elucidation of the cause of puerperal fever by Semmelweis in the Vienna Maternity and contended that his researches formed a strong proof in favour of the germ theory of disease.

Dr. P. Z. HEBERT said that Dr. Bantock had told them that germs were the result and not the cause of disease. But disease was a condition, not a material entity. Did Dr. Bantock maintain that bacteria were produced *de novo* by disease? Or did he think they were formed out of the diseased tissues? If not, where did they come from, since Dr. Bantock denied their presence in the air?

Dr. A. W. ADDINSELL did not think Dr. Bantock could congratulate himself on his powers of prophecy, because the doctrine of bacteriology held the field more victoriously than 12 years ago, when Dr. Bantock prophesied its speedy downfall. With regard to Mr. Stoker's experiments Dr. Addinsell contended that the correct explanation was that in the wound treated with mercury the drug had killed not only the staphylococci but also the granulations on which healing depended. The other ulcer healed because oxygen favoured the granulations and also diminished the virulence of the staphylococci. This view was supported by experimental proof. The absence of the gonococcus from a pus tube was no argument against the dependence of gonorrhœa on the gonococcus, for under certain conditions the latter lost its vitality.

Dr. H. JELLETT thought that Dr. Bantock had overlooked two important points: the first was the difference in virulence of bacteria which were morphologically the same; and the second was the immunity acquired by patients to the action of a particular form of bacteria as the result of the continued presence of that bacterium in the body. One case in four in which the gonococcus was present in cases of pyosalpinx was a large proportion if they took into account the number of cases of sterile, of tuberculous, and of septic pus tubes. Why did Dr. Bantock wash his hands even to the slight extent that he did? Was it a mere ritual?

The PRESIDENT said that he was an adherent of Lister's teachings from the days of the impermeable shellac with carbolic putty dressing down to the present time. He ridiculed the idea of drawing those distinctions made by Dr. Bantock between what he called the "grosser forms of septic mischief" and the lesser. Such teachings as those enunciated in the paper set back the hands of the clock so far as medicine was concerned some 25 or 30 years and they were all the more serious and dangerous because they emanated from one who was acknowledged to be a brilliant operator. He could not help coming to the conclusion that Dr. Bantock had not made himself fully conversant with the researches of bacteriologists within recent years. The attitude of the society should be such that its verdict should be unmistakeable in repudiating the views they had heard.

Dr. BANTOCK, in reply, said that he was disappointed at the course the discussion had taken, for no attempt had been made to refute a single point in his paper. All the speakers avoided these points and while professing to be followers of Lister showed that they had taken no notice of his latest teaching but adhered to that of 20 years ago. He was twitted with having avoided the typhoid fever epidemic at Worthing. He could retort that his critic equally avoided the Maidstone epidemic, as to which Dr. Poore in his Milroy Lectures substantially agreed with him.

PATHOLOGICAL SOCIETY OF MANCHESTER.

Ureteral Calculi Removed by Suprapubic Cystotomy.—New Method of Staining.—Exhibition of Specimens.

A MEETING of this society was held on March 8th, Dr. R. B. WILD, President, being in the chair.

Dr. KELYNACK, on behalf of Professor DRESCHFELD, showed a preparation from a case of Cardiac Rupture with Communication between the Ventricular Cavities.

Mr. STANMORE BISHOP showed Three Ureteral Calculi removed by Suprapubic Cystotomy. Two cases occurred in males and one in a female. The first, in a boy, aged 13 years, produced the usual symptoms of vesical calculus, was easily recognised by the sound, but was evidently fixed. At the operation six years ago an oxalate of lime calculus of the shape of a wheatsheaf was found, the stalk being fixed in the lower end of the ureter. Perfect recovery ensued and a report of good health was made last month. The second case, a woman, gave a history of renal colic at intervals since the age of 13 years. Menstruation commenced at 15 years. After this the pain was accentuated at the periods. Both ovaries and tubes had been removed a year previously by another surgeon but without relief. Stone was detected by recto-bimanual examination; it could not be felt from the vagina. It was removed but the patient died from anuria. In the third case, a boy, aged seven years, had complained of symptoms of vesical stone "since he was a baby" and a calculus weighing two ounces was found in the bladder and removed. The patient, however, did not improve, the temperature rose, and there was still great pain. Thinking that there might be an accumulation of pus in the cavum Retzii a rectal examination was made and a second stone was detected in the lower end of the ureter. This was removed and at once allowed the exit of pus from the corresponding kidney. The patient made a slow recovery. Mr. Stanmore Bishop discussed the symptoms produced by, and the various operations proposed for, ureteral stones impacted in this situation. In reply to Dr. Harris Mr. Bishop pointed out that a satisfactory result from massage must be very exceptional; that in two of the cases under discussion it could not have been borne; and that in the third it would have been extremely risky.

Dr. ORR read a preliminary note of a New Method of Staining the Myelin Sheath of Nerve Fibres in the Brain and Spinal Cord. The method consisted in the penetration with osmic acid of formalin-hardened blocks of tissue to bring out the normal fibres, and should it be desired to stain the morbid fibres then the nervous tissues—as in Marchi's method—had to be previously hardened in bichromate of potassium, 2 per cent., or in Müller's fluid. The blocks of tissue should not exceed one-eighth of an inch in thickness. The osmic acid was mixed with acetic acid in the following proportion: osmic acid, 2 per cent., four cubic centimetres; acetic acid, 1 per cent., one cubic centimetre. Formalin-hardened pieces of tissue ought to remain in this solution for from four to six days; Müller or bichromate-hardened nervous tissue for from 10 to 14 days. Fresh tissue placed in the above solution for 48 hours and then immersed in 10 per cent. of formalin demonstrated especially the fine fibres of the outermost layer of the cortex. The penetration being completed the block was then embedded in paraffin and cut. After removal of the paraffin from the sections differentiation was carried out by means of permanganate of potash, 1½ per cent., and oxalic acid, 1 per cent., except in bichromate-hardened tissue, the sections in this case being mounted after the paraffin had been dissolved out by xylol. Dr. Orr specially recommended the acetic-osmic acid solution on account of the certainty with which it stained the fine medullated fibres of the brain and also on account of its superior penetrating power over Marchi's fluid in Müller and bichromate-hardened nervous tissues. The communication was illustrated by a series of lantern slides.

The following card specimens were exhibited:—

Dr. ASHBY: (1) Congenital Syphilitic Cirrhosis of the

Liver; and (2) Fractured Humeri from a child the subject of Scurvy-Rickets.

Dr. F. C. MOORE: Some Morbid Infiltrations.

Mr. WESTMACOTT: A series of models illustrating the effect of Nasal Obstruction on the Hard Palate.

LIVERPOOL MEDICAL INSTITUTION.

"Bronchiolectasis."—Multiple Rodent Ulcer.—Exhibition of Specimen.

A MEETING of the Pathological and Microscopical Section of this society was held on March 16th, Mr. F. T. PAUL being in the chair.

Dr. R. BUCHANAN read a paper on "Bronchiolectasis." It was based on a case occurring in a boy, aged five and a half years, who died after several weeks' illness from an affection of the lungs believed during life to have been tuberculosis. At the necropsy no tubercle was found in any organ. The lungs had a "honeycomb" appearance, being riddled with minute holes averaging one-sixteenth of an inch in diameter. Dr. Buchanan then described minutely the pathology of his specimen and gave a *résumé* of the cases which had been described by other observers. His case seemed to show that the cavities were not true dilatations of bronchioles but rather vomical, due to breaking down of broncho-pneumonic foci and enlargement by ulceration. He also suggested the possibility that cases of this sort which were not fatal might be a connecting link between the catarrhal pneumonia of childhood and the bronchiectasis of later life or the non-tuberculous forms of fibroid lung. He suggested the term "ulcerative broncho-pneumonia" as preferable to "bronchiolectasis." The paper was well illustrated by microscopic specimens and lantern slides.—Dr. BARR argued that such cases were pyæmic, the cavities being originally embolic abscesses and not primarily within the air tubes. He described a case which he considered similar to Dr. Buchanan's and which was purely pyæmic, complicating a wound of the leg.—Dr. WARRINGTON also remarked on the paper and Dr. BUCHANAN replied.

Mr. PAUL read a note on Multiple Rodent Ulcer. He described three cases in which more tumours than one were present. In the first two the primary disease was situated on the nose and forehead respectively and in each had existed for nearly 20 years before secondary infection occurred. The secondary affection in both was in the submaxillary region, in the nose case on both sides, in the forehead case on one side only. In the third case there were three growths, all primary, one on the nose, one over the right external angular process, and one over the right mastoid. Microscopical examination of these showed that the first was a typical rodent ulcer, the second a beautifully distinct tubular adenoid carcinoma, while the third was a squamous-celled carcinoma. The note was illustrated by microscopic specimens and micrographic lantern transparencies.

Dr. W. T. ALLEN showed an exceedingly marked specimen of Fatty Degeneration of the Kidney.

Mr. C. G. LEE showed: 1. An Eye the Subject of Calcareous (or Osseous) Degeneration of the Choroid. It was removed from a man, aged 44 years, on account of trouble in the other eye. It had been blind for 40 years from a wound with a penknife. Mr. Lee thought that this and another case which he published some years ago supported the view that sympathetic ophthalmitis might arise from ciliary irritation without the aid of micro-organisms. He thought his case argued strongly against evisceration with implantation of glass globes. 2. An Eye removed from a child exhibiting Suppurative Choroiditis.

Mr. DOUGLAS CRAWFORD showed: 1. A Cyst removed from the Anterior Vaginal Wall of a woman, aged 27 years. 2. An Extra-uterine Gestation which had ruptured into the broad ligament. The last confinement was 19 years ago, since which there had been no pregnancy until this occurred. Besides the presence of the tumour the symptoms were slight. At the operation a large mass of clot was evacuated and the fœtus was from three to four months old and much macerated. No placenta or cord could be found.

Dr. ALEXANDER showed a Hydrocephalic Brain.

Dr. G. G. STOPFORD TAYLOR showed a Squamous-celled Melanotic Carcinoma originating in a mole. The pigment was chiefly contained within the epithelial cells.

Mr. HAWKINS-AMBLER showed (1) the Appendages from a case of Pyosalpinx; and (2) a Microscopic Specimen of a Simple Papilloma removed from the labium minus of a child, aged six years.

Dr. J. WIGLESWORTH showed: 1. A specimen of Stenosis of the Ileum caused by a Healing Tuberculous Ulcer. It was obtained from the body of a woman, aged 44 years. The constriction would only admit the tip of the little finger and was situated a foot and a half above the ileo-cæcal valve. Below the stricture were several other tuberculous ulcers and the lungs were also affected. 2. A kidney with two perfectly distinct ureters.

Mr. W. B. BENNETT showed an excellent specimen of "Madura Foot" well exhibiting the inter-communicating cysts and sinuses filled with dark granular material.

Dr. WARRINGTON showed some Microscopic Specimens and Drawings from a case of Caries of the Spinal Column in which the cord above the lesion showed some marked and interesting ascending degenerations.

The specimens were discussed by Mr. PAUL, Mr. GEORGE HAMILTON, Dr. ROBERT HAMILTON, Mr. BICKERTON, Dr. BENNETT, Mr. LEE, and Dr. WIGLESWORTH.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF STATE MEDICINE.

Tuberculosis.

A MEETING of this section was held on Feb. 17th, Dr. H. C. TWEEDY, the President, being in the chair.

Dr. GRIMSHAW read a paper on the Prevalence of Tuberculosis in Ireland and the Measures necessary for its Prevention. He reviewed the principal statistics of tuberculosis, and especially of phthisis mortality in Ireland, the analysis being mainly founded on a table of the deaths from tuberculosis in children under five years of age and of phthisis at the various ages of active life from 15 to 45 years in town and country districts. During the three years dealt with in the table—1895, 1896, and 1897—the average annual death-rate from all causes for Ireland was 17·3 per 1000; the rate for the town districts (that is towns with a population of 10.000 and upwards) was 25·4, and for the rest of Ireland 15·2. For Ireland the death-rate from all tuberculous diseases, exclusive of phthisis, was 0·7 per 1000; for country districts 0·4, for town districts 1·5, or nearly four times the latter rate. For phthisis alone the rates were for Ireland 2·0; for country districts 1·7, for town districts 3·3, or nearly double the usual rate. Taking all forms of tuberculous disease the rate for Ireland was 2·7; for country districts the rate was 2·1, for town districts 4·8, or more than double. Phthisis alone caused 11·7 per cent. of all the deaths in Ireland during the period under consideration, the percentage for the districts with towns of over 20.000 population being 13·3, for those with towns of 10,000 inhabitants and upwards 13·2 or slightly less, as compared with 11·1 per cent. for the rest of Ireland. The proportion of deaths from phthisis to total deaths is therefore very high even in the country districts of Ireland. The age at which phthisis causes the greatest proportion of the total mortality in Ireland is from 15 to 25 years, and the percentage of deaths to total deaths during this period is 44·6 per cent. in Dublin, 55·4 per cent. in Belfast, 54·4 per cent. in Cork, 56·3 per cent. in Limerick, 52·5 per cent. in Londonderry, and no less than 58·6 per cent. in Waterford.

Dr. MARTLEY read a short paper on the Death-rate from Tuberculosis, as exemplified in the male population of England, for the five years 1891–95.

Dr. MCWEENEY read a paper on the Bacteriological Aspect of Tuberculosis. With regard to the morphology of the tubercle fungus he had never failed to detect genuinely ramified forms in sputum whenever he had leisure to seek them out. The type of ramification was that of the genus cladothrix, and from the researches of Firchel, Coffin Jones, Hazo Bruns, and Ledoux-Lebard, there could be no doubt of the biological affinity of the tubercle fungus with streptothrix and actinomyces. The staining reaction long considered to be peculiar to the tubercle and leprosy bacilli was now known to be shared by a smegma bacillus, and by the pseudo-tubercle bacilli isolated by Mockler and others from cowdung, by Mockler from the leaves of timothy grass near the Görbersdorf Sanatorium, and by Rabinowitsch from

butter. The cause of the staining reaction was the presence in the sheath of the bacillus of a peculiar wax, as was shown last year by Aronson. This underwent gradual extraction by alcohol and ether, with the result that the bacilli lost their specific staining reaction. The discovery by Ledoux-Lebard of the bacillus of fish tuberculosis and the recently demonstrated inoculability of poikilothermous animals with a variety of a bacillus capable of thriving at ordinary temperatures were important recent additions to our knowledge.

Dr. P. LETTERS read a paper on the Distribution of Tuberculosis in Ireland. By statistical tables he sought to prove that tuberculous disease throughout Ireland—tabes mesenterica and tuberculous meningitis more so than phthisis—was regulated almost exclusively by aggregation of population. Small towns and villages bred tuberculosis largely. The most tuberculous region in Ireland extended along the eastern and south-eastern seaboard and was mapped out by the counties of Antrim, Down, Dublin, Wexford, and Waterford. The least tuberculosis was found in a compact region in the north-west comprising the five contiguous counties of Donegal, Leitrim, Cavan, Fermanagh, and Longford. These two regions contain respectively a high and a low percentage of urban population.

SOCIETY OF MEDICAL OFFICERS OF HEALTH.—A meeting of this society was held on March 10th, Dr. E. Gwynn, President, being in the chair.—Dr. A. Ashby read a paper on the Duties of Medical Officers of Health in Relation to Small-pox in view of the Alterations in the Law of Vaccination. The hope expressed by those who had forced this "tremendous experiment" on the country for five years, that it would disarm opposition to vaccination, had not been fulfilled and in many cases vaccination had been practically abolished. He did not deny that there were a few improvements in the law, but Clause 3 which imposed on the magistrate the invidious duty of deciding whether objections were "conscientious" was absurd. Again, it seemed anomalous that a matter closely connected with the public health should be committed to the Poor-law and not to the sanitary authorities, though it would be inexpedient at the present time to effect a change which might lead to the election of these authorities being dependent on their opposition to vaccination. But medical officers of health should endeavour to secure isolation accommodation where such had been deficient or wholly wanting; but elsewhere should small-pox break out with a severity previously unknown and the accommodation which had sufficed in the past prove inadequate the people must pay in hasty and therefore costly provision for their neglect of the easier and inexpensive protection of vaccination. Adults might be left to suffer for their own folly, but the infants should not be sacrificed to that of their parents, and in the absence of compulsion organisation should be opposed to organisation, branches of the Jenner Society should be established everywhere, especially where the Anti-vaccination League was at work, and the public educated by lectures, the distribution of literature, &c. The coöperation of men and women of all classes should be encouraged, but the medical officer of health would do well to avoid involving himself in heated newspaper controversies.—Mr. Beale Collins said that in his district only 12 objectors had come forward in a population of 35,000 and vaccinations had increased since the passing of the Act.—Dr. Woodforde told how the improvised accommodation required by an outbreak of 50 cases in a rural district cost £1500.—Dr. E. Groves found great difficulty in getting a site for a tent and complained that the Local Government Board would not allow the reception of even real paupers in the workhouse infirmary.—Dr. F. T. Bond felt that little could be done save during an epidemic. At Gloucester the sanitary authority was now mostly composed of anti-vaccinationists, who, though professing to rely on isolation, had actually reduced the accommodation from 48 to 16 beds in an iron building with no road or proper arrangements.—Dr. Seaton found hospital provision no less unpopular than vaccination, and the Local Government Board instead of compelling the authorities to provide it, placed obstacles in the way of such as were willing. Guildford had to fight from court to court for the erection of a hospital in one of the loneliest spots in the county, the opposition coming from a single resident at a distance of two miles.—Dr. McVail considered it impossible to define sufficient accommodation, for where all were vaccinated none was wanted and where all were unvaccinated no amount would suffice. There should be a permanent and complete administrative block with ample space and facilities for the erection of temporary buildings to meet the requirements of the occasion.—Dr. Sykes thought that the public being unable to appreciate the differences of degree in vaccinations and of type in small-pox it would be well to confine oneself to crude statistics in discussions of the subject. He felt very strongly that the whole system of certification of vaccination as well as of the causes of all deaths needed revision. The mere fact should be reported by the friends, but the certificate describing the result of a vaccination or the cause of a death should be, as in the notification of infectious diseases, forwarded by the medical attendant to the respective authorities.

EPIDEMIOLOGICAL SOCIETY.—A meeting of this society was held on March 17th, Dr. Franklin Parsons, President, being in the chair.—Mr. W. H. Crosse, consulting medical officer of the Royal Niger Company, read a paper on Blackwater Fever, or Hæmoglobinuric Fever, the first instalment of which we publish on page 821.—Dr. Manson said that he believed in the daily use of from five to 10 grains of quinine as a prophylactic, and mentioned the case of a missionary who during a residence on the west coast of 14 years had neglected this precaution on three occasions only and each time had an attack of fever, from which he had otherwise enjoyed exemption. Koch had called attention to the fact that in East Africa negroes coming from the interior who lived with and like the Europeans suffered to some extent, and that generally the natives were immune to the fevers of their own district but not to those of others. It should be remembered that the presence of a parasite did not prove it to be the cause of a disease; plasmodia were often found in persons suffering from typhoid fever, since malaria predisposed to, though it had no connexion with, enteric fever. In China he had seen many cases of severe malaria and extreme cachexia but never accompanied by black water. Either some other factor was required or the plasmodia acquired different properties according as they had passed through the bodies of one or other species of mosquito. He might mention the case of a man who during a febrile attack after his return home passed black urine, but the colour was shown to be produced by an enormous excretion of indican, neither hæmoglobin nor albumin being present.—Dr. Harford-Battersby enjoined caution in diagnosis, having himself observed epidemics in which the urine was almost black from bile pigments and blood, but which was not bæmoglobinuric; that in which Bishop and Mrs. Hill died with about 50 other Europeans was true yellow fever. The paludal fevers of Africa were far less distinctly remittent than those of other regions. Blackwater fever was certainly on the increase but seemed invariably to follow chills, indiscretions, or exposure to freshly turned-up soil. Vomiting was not a constant symptom; he had not vomited in any of his three attacks though he had melæna.—Mr. Craister had taken quinine daily during his five years on the Niger and he had only three very slight attacks of fever and none of blackwater fever. He had not lost one of the 11 cases of hæmoglobinuric fever in which he had given quinine from the first, or saved one of the six or seven in which he could not, they having been attacked while away up the river.—Dr. Washbourn from his study of paroxysmal and experimentally induced hæmoglobinuria could entirely confirm Mr. Crosse's explanation of the phenomenon. At first the liver transformed the hæmoglobin into bile pigment, but when the quantity exceeded the power of the liver the excess passed out by the kidney.—Mr. Pakes referred to the Texas fever among cattle which was attended with hæmoglobinuria, and perhaps also hæmaturia, and in which large doses of quinine were beneficial. The action of habitual small doses of quinine was not exerted on the plasmodia so long as they were enclosed within the blood disc, but when, having sporulated and burst its walls the numerous progeny of the original plasmodium escaped, they were attacked and killed before they could invade other discs. Already seven varieties of plasmodia had been distinguished by Italian and German investigators, and if only one or two of these had the power of inducing hæmoglobinuria their geographical distribution, independent of the malignancy of local malarial fever, was easily explained.

OXFORD MEDICAL SOCIETY.—An ordinary clinical meeting of this society was held on March 11th in the Radcliffe Infirmary, Mr. H. P. Symonds, President, being in the chair.—Dr. Ritchie read notes of a case of Pontine Hæmorrhage and showed the brain which exhibited a small

hæmorrhage on the surface of the pons; on section a very extensive hæmorrhage was found ploughing up the whole substance of the pons. The cerebral arteries were markedly atheromatous. The patient, a woman, aged 48 years, had attended a hospital as an out-patient to be treated for a skin affection when she suddenly became helpless with some spasmodic twitching of the left eye. She rapidly became unconscious and sank four hours after her admission. The pupils were noticeably contracted before death and the temperature rose to 105° F. There was no atheroma of the heart or large vessels corresponding to that found in the cerebral arteries, but there was some interstitial change in the kidneys, with considerable periarteritis. No history of syphilis was obtained.—Dr. Turrell read notes of a case of Placenta Succenturiata. A woman, a primipara, fell out of a dogcart when six months pregnant. She was delivered at full term, the labour being natural and easy; the placenta was complete and of normal size. 24 hours after, the patient being in great pain, the uterus was found to be distended with clots. These were expressed, but the hæmorrhage continuing the uterus was explored and two pieces of placenta of the size and shape of bananas were removed. The patient remained very collapsed and bloodless, with a pulse of 150 and a temperature of 102° F. A douche was given which was followed by a rigor. On the following day, the discharge being a little offensive, the uterus was explored under an anæsthetic and a few shreds were removed from the fundal region. A douche was administered which was again followed by a rigor. These were the only rigors which occurred during the progress of the case and on each occasion followed the douching. The temperature fluctuated above normal for a fortnight, but the patient ultimately made a good recovery. Dr. Turrell drew attention to the fall which the patient had during pregnancy, as from what was known of the etiology of placenta succenturiata it was probable that this gave rise to hæmorrhage into the placental tissue with destruction of some of the villi. Dr. Brooks suggested that the rigors were due to absorption of perchloride of mercury, but Dr. Turrell on the second occasion had used an iodine lotion. He regarded it as a reflex phenomenon.—Mr. Symonds read notes of two cases of Appendicitis in which he had successfully operated and showed the patients. One of them, a woman, aged 22 years, had had three or four mild recurrent attacks before admission and before operation there was distinct tenderness at McBurney's point. The appendix was slightly adherent to surrounding structures and was much elongated, passing up under and adhering to the under surface of the liver. It was removed by circular amputation, the peritoneal surfaces being sutured with silk. Recovery was uneventful. The second case was also one of mild recurrent appendicitis in a woman, aged 23 years; the appendix was inflamed and adherent to surrounding tissues and was removed in a way similar to the above; the patient made a good recovery.—Dr. Duigan showed a specimen of Vesical Calculus weighing four ounces which was found post mortem in the bladder of a young man who had refused all surgical treatment.—Dr. Elsmore showed a Skiagram of a Broken Needle embedded in the Wrist.

SHEFFIELD MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on March 2nd, Dr. Alfred Robinson, President, being in the chair.—Dr. Keeling showed the specimens removed and gave details in the following cases:—1. Cystic Myoma of the Uterus successfully removed by abdominal section in an unmarried woman, the uterine wound being treated intra-peritoneally. 2. Dermoid Cyst and Ovary. The patient was single; recovery was good. 3. Broad Ligament Cyst removed from a married woman, aged 30 years. The patient was sterile and had been married 10 years; recovery was excellent. 4. Menstrual Fluid removed in a case of Imperforate Hymen. The patient, otherwise a healthy well-grown girl, was 17 years of age and had never menstruated. 5. Cancerous Uterus removed by vaginal hysterectomy from a married multipara, aged 42 years. Recovery had been excellent with the serious exception that a urinary fistula had resulted probably from the bladder having been caught by one of the forceps used in securing the broad ligaments.—A discussion followed on the Operative Treatment of Fibromyomata and Cancer of the Uterus in which Dr. J. W. Martin, Mr. Richard Favell, Dr. Andrew Walker, Dr. Sinclair White, Mr. Pye-Smith, and Mr Sidney Barber took part.—Dr. Cairns read notes and showed the specimen of a case of Ectopic Gestation diagnosed by Dr. Andrew Walker and himself and successfully operated on by Dr. Sinclair White.—Dr. Arthur Hall showed the following specimens:—1. Heart with Stenosis of the Pulmonary Artery, Imperfect Ventricular Septum, and Patent Ductus Arteriosus, from a boy, aged 11 years, who died from pneumonia. The cyanosis was not extreme except during the last few days of life. 2. Liver with Gall-stones in the Gall-bladder, an Impacted Stone in the Ductus Choledochus, and several Stones in the Intrahepatic Bile-ducts which were largely dilated. In the left lobe were multiple abscesses secondary to well-marked cholangitis. At the left extremity of the liver there was a large subphrenic abscess which seemed to be secondary to the suppuration in the left lobe. 3. Carcinoma of the Bodies of the Seventh Cervical and Upper Three Dorsal Vertebræ—part of a widely-distributed cancer the primary seat of which was not discovered. The bodies of the vertebræ had given way and produced transverse myelitis which was the immediate cause of death. 4. Typhoid Ulcers preserved by Kaiserling's method with formalin and glycerine.—Dr. George Wilkinson gave an account of a case of Subphrenic Abscess operated upon by him. The patient, a man, aged 47 years, was admitted into hospital very ill with a prominent, tense, fluctuating swelling in the epigastric region. Hepatic abscess was diagnosed, the swelling was incised, and two pints of pus and hydatid fluid were evacuated. The patient complained of much pain in the left side when being lifted on to the operating-table. Next day there were signs of a subphrenic collection of fluid in the left side. This was evacuated and drained after resection of a portion of the seventh rib in the anterior axillary line and suture of the costal pleura to the diaphragm. Drainage was continued for two months after which the cavity healed and the patient was discharged.

CHELSEA CLINICAL SOCIETY.—A meeting of this society was held on March 7th in the theatre of the Jenner Institute, Mr. J. Foster Palmer, President, being in the chair.—The President, in a few opening remarks, offered the thanks of the society to Dr. Allan Macfadyen for granting them the use of the theatre. Referring to the subject of the lecture they were about to hear he said that though the society was a clinical society, yet that bacteriology was the handmaid of clinicology. He then called upon Dr. Macfadyen for his lecture upon Enteric Fever and Diphtheria.—Dr. Macfadyen, in the course of his lecture, dealt mainly with the bacteriological aspects of these diseases. The life-history of the typhoid fever bacillus was discussed in its different phases and cultures of the organisms on various soils were shown. The spleen and urine were stated to be the most convenient sources of pure cultures of the bacillus, the search for it in the dejecta being attended with considerable difficulty. The Elsner potato-gelatin soil had not proved so successful a means of isolating the bacillus from the stools as had originally been anticipated. The means adopted for differentiating between such closely allied organisms as the typhoid and colon bacillus were explained and illustrated. The sources of infection were next dealt with and the pathological lesions found in the disease, whether due to primary or to secondary infections, were explained. The bacillus had undoubtedly pyogenic properties. Pfeiffer's phenomenon and Gruber's reaction were discussed and the great value of Widal's test in doubtful cases of the disease was emphasised. All these reactions were stated to be of a specific character and for the successful employment of the Widal test a good strain of the typhoid bacillus was said to be essential. The difficulty experienced in obtaining any specific toxins from cultures of the organism had up to the present prevented the preparation of an antitoxin serum of any value for treatment; on the other hand, the antityphoid "vaccines" proposed might be of value as preventive agents. The salient points connected with the bacteriology of diphtheria were then referred to. The antitoxin treatment was discussed and the importance of an early bacteriological diagnosis and the immediate use of the serum treatment were pointed out. Through improved methods of preparation the amount of serum necessary for injection had been greatly reduced and thereby the danger of any unpleasant sequelæ reduced to a minimum. The methods of standardising the serum were explained and it was stated that it was an erroneous impression that the antitoxic substances had any poisonous or deleterious action on the system. The lecture concluded with a lantern demonstration and an exhibition of a number of microscopical

specimens in illustration of the subject matter of the paper.—A discussion followed in which Mr. Lennox Browne, Dr. C. J. Harrison, Dr. Woulfe Flanagan, Mr. J. Marsh, and Mr. E. Vinrace took part.

Reviews and Notices of Books.

The Ophthalmology (Liber de Oculo) of Petrus Hispanus (Peter of Lisbon), subsequently Pope John XXI. The Latin text edited and translated into German by Dr. S. M. BERGER. Munich: J. F. Lehmann. 1899. Pp. 135. Price 3*s*.

THE editor of this interesting little volume states that the original only exists in manuscript and that in printing the text and translation he has availed himself of opportunities of collating the copy in the Royal Bavarian Library in Munich with those in the Florentine, Parisian, and Roman libraries. Petrus Hispanus was the son of a physician named Julian and acquiring a thorough knowledge of medicine practised for some time as a physician with great success. He afterwards entered holy orders, became Archbishop of Braga in Portugal, was made Cardinal in 1273, and on the death of Adrian V. he was elected to the Pontifical dignity on Sept. 13th, 1276, as Joannes XX., though in his epitaph at Viterbo he is called Joannes XXI. He died in 1277. He wrote several works on medicine. The present one on ophthalmology is referred to by one of the fathers of French surgery, Guy de Chauliac, who wrote in the early part of the fourteenth century. Petrus Hispanus commences with sufficient lowliness by stating that he is the humblest of physicians. He describes the eye as a round, noble, and brilliant organ composed of seven membranes and three humours and his description of these is comprised in a very few lines. The physiology of vision is in accordance with the imperfect physical knowledge of the time and vision is held to be something streaming from the eye. He gives a curious list of the diseases of the eye—viz., inflammation, hydrophthalmus, hard swelling, itching membranes, leucoma, cancer, swelling, water, illusions of vision, bursting of the globe, stony tumour, adhesion of the lids, eversion of the lids, lagophthalmus, distichiasis, phtheiriasis, hordeolum, inversion of the lashes, eczema, herpes, glandular tumour, loss of eyebrows, golden yellow tumour, and chalazion. He asks, What is "obtalmia"? and answers that it is an inflammation with generation of heat of the conjunctiva and gives its etymology as *ob*, against, and *talmos*, eye; hence something acting injuriously on that organ. The treatment recommended for "obtalmia" is rest, sleeping with the head elevated in a darkened room, refraining from conversation, coitus, and exposure to smoke and dust, abstinence from green vegetables, garlic and peppery diet, quarrelling and disputing, and from roast and baked food. When it is dependent on conditions of the blood venesection and the administration of Cassia fistula and Prunus damascena internally are recommended, whilst decoction of Trigonella fœnum græcum and violet leaves should be applied topically. Local applications, he observes, should be frequently renewed, as he knew of a case where a bandage was kept on for three days and a wound of the eye from a blow suppurated. Together with many drugs still in use, such as mallow, valerian, aloes, myrrh, squills, and cumin, several curious remedies are ordered, as the blood of a goat, the lungs of the goat or ox, the blood of a bat, woman's milk, and oil in which lizards have been thrice boiled, and he vaunts as a special wonder-working secret a substance which will cause the physician, who can and will make it, to be called not a physician but a prophet. This is a mixture of silver filings with those of copper, iron, lead, steel and gold, and storax, the proportions of which, he rather prudently adds, may be modified according to the finances of the patient. The mixture of filings and storax is to be placed for a day in the urine of a boy, on the second day in warm white wine, on the third day in fennel juice, on the fourth in white of egg, on the fifth in the milk of a woman brought to bed of a boy, on the sixth in red wine, on the seventh in the whites of seven eggs all of which are to be poured into a retort, the fluid distilled, and the distillate kept in a gold or silver cup. The prescription is to be kept secret, for its value is simply inestimable. Elsewhere the use of the patient's own urine and saliva and even of powdered fæces of the lizard is recommended.

The editing of the volume has been excellently accomplished. The upper half of each page is occupied with the original manuscript, the lower half gives a German translation with the Latin names of the plants specified, and there is a capital bibliography. The book will be read with interest by all who have a taste for archæology.

Squire's Companion to the British Pharmacopœia. Seventeenth edition. Revised by PETER WYATT SQUIRE, F.L.S., F.C.S. London: J. & A. Churchill. 1899. Price 12*s*. 6*d*.

THE new edition of this well-known book has not been produced with unseemly haste. It is nearly a year since the new Pharmacopœia was rendered accessible to all who wished to consult it prior to actual publication. The changes in description, in processes, and in dosage were so numerous and so important that the labour of incorporating them in the Companion and of producing a commentary must have been considerable. The task of incorporation has been very thoroughly performed and we congratulate the author upon the fact. So far as we have been able to test no statement of fact in the body of the Pharmacopœia has been omitted from the Companion. If the running commentary is less forcible than usual this is to be reckoned to the credit of the Pharmacopœia. Independently of his own experiments, the author has included numerous references to criticisms and suggestions which have appeared in the chemical and pharmaceutical journals, and in some cases these criticisms contradict each other. But it is none the less valuable to have them all recorded in one volume. As in former editions this volume contains much valuable information concerning remedies included in foreign pharmacopœias, while the newest candidates for favour receive adequate recognition. The inclusion of therapeutic references and of prescribing notes will prove serviceable to practitioners, since the best modes of prescribing and dispensing so often need a helping hand. A new section on Therapeutic Agents of Bacterial Origin has been written by Dr. R. T. Hewlett and contains indications for dosage, together with numerous references to recent literature. The volume as a whole not only contains a vast amount of interest for prescribers and dispensers, but it also supplies innumerable references to sources of detailed information. It is obviously the outcome of care and knowledge, and consequently earns a position of authority.

The Blood: How to Examine and Diagnose its Diseases. By ALFRED C. COLES, M.D. Edin. With six Coloured Plates. London: J. & A. Churchill. 1898. Pp. 260.

SO much advance has been made in recent years in our knowledge of the condition of the blood in disease that a small work on the subject dealing with it in a manner suitable for the clinician and not for the pathological histologist only is certain to be welcomed. Such a want Dr. Coles has attempted to supply, and all who read the book

must feel that he has admirably succeeded in his endeavours. The methods of examining the blood are first detailed and the processes described are easy to follow and do not require a very complicated set of apparatus.

The general morphology of the blood is next considered. Dr. Coles possesses the happy knack of expressing what he means in simple words and without the introduction of unnecessarily numerous new scientific terms. Unfortunately, the many investigators who have made a study of the corpuscular elements of the blood have not adopted any uniform nomenclature and consequently a large number of terms have found their way into medical literature all designating the same thing. Thus the leucocytes most commonly met with in the blood have been variously named multinucleated leucocytes, neutrophile cells, or leucocytes with granules (Ehrlich); finely granular oxyphile or acidophile cells (Kanthack); the oxyphile cells (Gulland); microphagocytes (Metchnikoff); cells with finely granular protoplasm (Max Schultze); and leucocytes of the second variety (Hayem). This confusion is to be regretted, but Dr. Coles has collected all the synonyms and placed them at the head of each section so that reference is materially facilitated. The part of the book, however, which will be most thoroughly appreciated is that devoted to the Pathology of the Blood. The various diseases characterised by changes in the blood are described seriatim. This gives a much better idea of the value of an examination of the blood than if the usual plan had been adopted of mentioning the diseases in which certain corpuscular changes are found under the description of these changes. Primary or Idiopathic Anæmia is first considered. Under this heading we find a number of important pathological conditions, such as progressive pernicious anæmia (the differential diagnosis being especially well studied), leucocythæmia, lymphatic leucocythæmia, Hodgkin's disease, and splenic anæmia. This section is concluded with a differential chart of the most important forms of anæmia. Next we find described Secondary or Symptomatic Anæmia, such as that due to malignant disease and hæmorrhage.

Malarial Parasites naturally receive due consideration and then follow a series of sections on the Blood in Acute Diseases, such as pneumonia and typhoid fever. The chapter on the Condition of the Blood in Various General Diseases, such as diabetes, gout, myxœdema, &c., also contains much useful information.

The illustrations are nearly all original and are beautifully executed and reproduced. The whole work is very readable and will doubtless receive the appreciation which it deserves.

LIBRARY TABLE.

Notes on Essential Oils. By T. H. W. IDRIS, F.C.S. London and Bristol: Geo. Du Boistel and Co. Pp. 193. 1898.—The essential oils are complex compounds and their chemistry is by no means clear at the present time. The printed information, however, on the subject is somewhat widely scattered through scientific literature and Mr. Idris is entitled to a word of thanks for placing in collective form all that is known of the composition, chemistry, and analysis of these very interesting bodies. It seems probable that as our knowledge of the composition and constitution of essential oils increases we shall be able to anticipate nature and to construct them by a synthetic process. It will, indeed, be a chemical triumph if we are able at length to construct oil of roses or of lavender from turpentine, yet the proximate composition of these bodies is very similar. This little book is an interesting and valuable contribution on the subject and will prove a very handy source of reference. In an appendix a useful table of constants is given.

Physical Chemistry for Beginners. By Dr. C. M. VAN DEVENTER, with a Preface by J. H. VAN 'T HOFF. Translated by R. A. LEHFELDT, D.Sc. London: Edward Arnold. Pp. 146. Price 2*s.* 6*d.*—The study of chemico-physics is equal in importance to the study of pure chemistry itself. Indeed, so far has our knowledge of the constitution and structure of bodies been advanced that but a poor idea of the science would be gained without understanding the physical principles underlying this knowledge. The application of physical methods to the determination of molecular weight and the number of atoms in the molecule affords evidence on this head. Again, by studying the nature of that interesting and peculiar phenomenon of solution further light has been thrown on the architecture of molecules. This book, which is translated from the Dutch, fills a distinct gap. There have, of course, been published large volumes on the subject of physical chemistry—as, for instance, those of Ostwald and Victor Meyer—but these are much too advanced for those who have simply skimmed through mathematics and physics. At the same time the treatment of this section of the subject can scarcely be adequately done in the ordinary chemical text-book. The book, in fact, does not assume that the reader is very deeply acquainted with certain mathematical principles. And thus it has been written to meet the needs of students of medicine and pharmacy as well as those of chemists. It should well fill this excellent educational purpose.

Testing Milk and its Products. By E. H. FARRINGTON and F. W. WOLL, of the University of Wisconsin. Fourth Edition, Revised and Enlarged. Madison, Wis.: Mendoza Book Co. 1899. Pp. 236. Price $1.—This is a manual intended for dairy students, creamery and cheese-factory operators, food chemists, and dairy-farmers. It deals most exhaustively with the chemical analysis of milk, butter, and cheese. It omits any reference to the bacteriological diagnosis of dairy products. A good deal of space is devoted to praising the process known as the Babcock test for milk and the frontispiece is the portrait of the inventor of this test which essentially depends upon the separation of fat after treating the milk with certain reagents in a centrifugal machine. The centrifugal process certainly facilitates the accurate estimation of the fat in milk. It can be conducted by any ordinary individual without any special analytical knowledge. The book is sure to be in demand by those engaged in the industry.

The Baths of Mondariz.—We have received an illustrated guide to, and description of, the mineral waters of Mondariz. This is a popular health resort situated in Galicia. Perhaps the best idea of its position will be given to our readers if we say that it is not very far from Santiago. The bathing establishment, which seems very complete, is owned by two brothers named Peinador and the waters are of the alkaline carbonate type containing also a little iron. Good effects are said to have been obtained in lithæmia and sundry skin affections. Spain is an almost unknown land to the majority of English people, but even apart from its wealth of mineral water it is a very delightful country to visit. Those who love art, history, architecture, or scenery, to say nothing of courtesy and cheapness, will find their desire fulfilled in Spain.

JOURNALS AND REVIEWS.

Edinburgh Medical Journal.—The opening article of the March number is on the Treatment of Ozæna, with special reference to cupric electrolysis. It is written by Dr. P. McBride who states that Garrigou-Désarènes is said to have introduced the method in question. In 1895 the Society of

Belgian Laryngologists and Otologists appointed a committee of investigation. Dr. McBride thinks that cupric electrolysis has not yet been touched upon in English literature. He began to experiment with it in 1897 and now describes eight cases occurring among out-patients. He employed a current varying in strength from three to 10 milliampères, rarely exceeding the latter. Cocaine was used in most instances, if not in all, and after cleansing the nostrils the copper needle attached to the positive pole was inserted into the inferior or middle turbinated bone—sometimes into the tissues lining the middle meatus, while the platinum or steel needle was passed into the septum. Each sitting lasted about 10 minutes. Four of the eight patients were practically cured for long periods extending to 18 months. Dr. E. M. Brockbank writes on the Causation and Rhythm of the Crescendo Murmur of Mitral Stenosis, meaning thereby the murmur usually called presystolic. Altogether there are eight original articles.

Dublin Journal of Medical Science.—The original communications in the March number are on the Prevalence of Tuberculosis in Ireland (by Dr. T. W. Grimshaw, Registrar-General for Ireland), on Mullaranny as a Health Resort (by Dr. F. J. B. Quinlan), and a further instalment of the articles on Public Health and Preventable Disease (by Dr. Patrick Letters).

Analytical Records
FROM
THE LANCET LABORATORY.

(1) EXONIA MALT EXTRACT; (2) AMBROSIA; AND (3) AMBROSIA PASTILLES.

(EVANS, GADD AND CO., FORE-STREET, EXETER, AND REDCLIFF-STREET, BRISTOL.)

WE have noticed these preparations on a previous occasion, but there are some fresh points about them worthy of record. "Exonia" is the comparatively new name of the extract of malt made by this firm. It is exceedingly active amylolytically. It possesses an agreeably malty flavour and is attractively light in colour. The bottle in which this preparation is contained is provided with a cap which represents an arrangement which has long been wanted for the convenience of measuring definite quantities of sticky viscid preparations like malt extract. The cap is provided with a metal slide which when opened allows the extract to escape, while when the cap is smartly shut the flow is neatly cut off and there is no unpleasant dribbling of the liquid down the sides of the bottle. The extract is contained in the "Ambrosia" pastille which consists of a gelatin lozenge possessing a very agreeable flavour of freshly prepared malt. "Ambrosia" is a combination of "Exonia" with Devonshire cream. This forms a perfectly homogeneous mixture in which separate fatty particles cannot be distinguished until water is added. It is a very palatable compound and should possess distinct therapeutic value akin to the similar combinations of active malt extract with cod-liver oil.

TUBORG BEER (BREWED IN DENMARK).

(THE TUBORG LAGER BEER AGENCY, NEWCASTLE-ON-TYNE.)

It was in the Carlsberg laboratories at Copenhagen that Professor Hansen made his important discovery of cultivating single species of yeast so that by employing a pure culture in the brewing of beer a sound and always uniform product could be ensured. The application of this discovery to the brewing of beer on the continent accounts largely for the rapid advances and improvements made in the brewing processes there. The beers under analysis are evidence of the importance of this discovery and of the excellence of the results obtained by its application. The analyses of the specimens submitted to us were as follows:—Wiener-öl beer: malt extractives, 3·78 per cent.; mineral matter, 0·21 per cent.; alcohol, by weight 4·00 per cent., by volume 5·00 per cent., equal to proof spirit 8·77 per cent. Lager beer: malt extractives, 4·26 per cent.; mineral matter, 0·28 per cent.; alcohol, by weight 4·00 per cent., by volume 5·00 per cent., equal to proof spirit 8·77 per cent. Tuborg beer for export: malt extractives, 3·35 per cent.; mineral matter, 0·14 per cent.; alcohol, by weight 5·87 per cent., by volume 7·32 per cent., equal to proof spirit 12·84 per cent. We need make but little comment on these results. The specimens were quite bright and in sound condition. They are desirably light in character, showing a low alcoholic strength, and the taste was delicately bitter. The absence of objectionable preservatives and of bitter substitutes was ascertained.

ERASMIC SOAP.

(J. CROSFIELD AND SONS, LTD., WARRINGTON.)

A very delicate test showed that the materials in this soap are well balanced. There was no trace of free alkali. The soap is well milled and desiccated and yielded a full creamy lather. It is made delicately fragrant with essential oils. The soap basis is excellent and evidently composed of the choicest materials.

ST. LEGER MINERAL WATER (POUGUES).

(AGENTS: VOIGT, BARTON AND CO., 25, GREAT TOWER-STREET, E.C.)

This water drawn from the St. Lèger spring in the province of Loire, France, holds the reputation of affording benefit in urinary diseases as well as in gastro-intestinal dyspepsia. Pougues is counted amongst the health resorts and spas of Europe. We find that the water is slightly sparkling with an excess of carbonic acid gas. It is practically free from iron. It contains 2·37 grammes per litre of saline constituents, foremost amongst which are sodium carbonate 1·59 grammes, and common salt 0·19 grammes, the difference being made up by lime and magnesium salts. It further contains some sulphate of soda and distinct traces of lithium salts. It is an alkaline carbonated water, sedative and antacid. A course of the waters of the composition just described is well known to give benefit to patients inclined to gastric and urinary disorders.

THYROGLANDIN.

(EVANS, LESCHER AND WEBB, 60, BARTHOLOMEW-CLOSE, .C., AND LIVERPOOL.)

Thyroglandin is stated to be prepared by a patented process in such a way that the active principle is presented for administration instead of the simple thyroid gland itself. It is stated that this preparation is of four times the strength of the fresh glands. The dose is from one to five grains and pills are prepared containing one grain of thyroglandin. Thyroglandin itself is in appearance a brownish powder like dried beef meal and possessing a similar smell. It yielded, we found, an important amount of iodine on suitable treatment and extraction. The preparation is an important addition to organotherapy and is calculated to ensure greater uniformity and certainty of action.

FLORIO'S VIRGIN MARSALA.

(FLORIO AND CO., MARSALA; AND SECRETAN, CAMPBELL AND CO., 24, HOOD-LANE, E.C.)

We have received two specimens of this wine for examination. The difference in composition will be seen in the following analyses which we have made. Marsala marked V.: extractives, 6·03 per cent.; mineral matter, 0·47 per cent.; sugar, 3·60 per cent.; tartaric acid, 0·30 per cent.; acetic acid, 0·15 per cent.; alcohol, by weight 14·82 per cent., by volume 18·25 per cent., equal to proof spirit 31·99 per cent. Marsala marked V.V.O: extractives, 6·43 per cent.; mineral matter, 0·38 per cent.; sugar, 4·16 per cent.; tartaric acid, 0·27 per cent.; acetic acid, 0·078 per cent.;

alcohol, by weight 16·46 per cent., by volume 20·24 per cent., equal to proof spirit 35·47 per cent. Both are genuine products of the grape. The former (V.) is a somewhat drier wine than the latter, though both contain a notable amount of sugar. The wine marked V.V.O. is an old luscious wine with full development of etherial character. Both contain a marked amount of sulphate of potassium which implies the practice of adding sulphate of lime to the grapes during pressing.

"BREAKFAST HEALTH BEVERAGE."

(THE BREAKFAST HEALTH BEVERAGE CO., REDDITCH.)

This curious admixture of roots is described on the label of the tin as "a real boon to those with whom tea and coffee does (*sic*) not agree." In our opinion both celery and parsnips are utterly spoiled by this method of treatment. Some vague aromatic constituents are thereby developed, the mixture yielding an infusion not unlike coffee in appearance but more like chicory in regard to taste. The preparation is very rich in potassium salts, but we cannot endorse the opinion that "it supplies at last a long-felt want," as is also stated on the label of the tin.

VITÆ ORE.

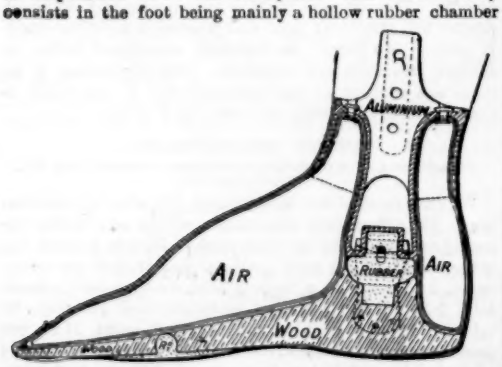
(THE VITÆ ORE CO., 39, TEMPLE-CHAMBERS, TEMPLE-AVENUE, E.C.)

This preparation is regarded as "a valuable and important discovery." The discovery amounts to a recognition of the fact that ore containing pyrites or native sulphide of iron gradually oxidises in moist air into proto- and per-sulphate of iron. To the presence of these salts the medicinal value of the powder is attributed. Cold water readily extracts both the per- and proto-sulphate of iron. According to our analysis the ore yields 13·20 per cent. of ferric sulphate and 3·9 per cent. of ferrous sulphate. Iron in these forms is not usually prescribed, being regarded as unsuitable and leading frequently to digestive disturbance and decidedly constipating effects. The ore further contains unaltered sulphide of iron and free sulphur and a large residue of silicious matters, and presents in fact all the appearances of the crushed ore obtained from gold-bearing quartz. The clinical results obtained were satisfactory, but the preparation showed no superiority over "Blaud's pills" or other remedies used in the treatment of anæmia.

New Inventions.

A NEW ARTIFICIAL LIMB.

THIS is an artificial leg and foot ntended for use in cases of amputation below the knee-joint. The chief novelty consists in the foot being mainly a hollow rubber chamber



which is inflated in exactly the same way as is a bicycle tyre. The skeleton of the foot, so to speak, is of wood and contains within it a rubber-faced joint which permits movements like those which take place at the ankle. The illustration shows very clearly the construction of the foot. A pair of rubber pneumatic pads surround the stump itself, so that no undue pressure is exerted on the tissues. We think this form of artificial leg is likely to prove very useful in suitable cases as it is light and of sufficient elasticity. We have seen a patient who had undergone amputation of both legs below the knee and who was wearing two of these limbs. Although having little or no command over the knee-joint he was yet able to walk very fairly well and to go up and down stairs safely. The price is eight guineas and the appliance was invented by Henry Yearsley, engine driver, 6, Gleaves-road, Eccles, Lancashire.

AN IMPROVED ADENOID SCRAPER.

FOR the removal of adenoid vegetations in the naso-pharynx Mr. H. Bendelack Hewetson, ophthalmic and aural surgeon to the Leeds General Infirmary, employs a modification of the well-known scraper introduced some years ago by Dr. Hartmann of Berlin. Hartmann's scraper is stirrup-shaped and triangular in form, the double semi-sharpened edge being set at somewhat less than a right angle to the shaft, pointing towards the posterior nares. It often happens, however, that vegetations in the naso-pharynx are so situated that it is difficult to bring the scraping edge of this instrument to bear on them, and Mr. Hewetson prefers one which is quite blunt towards the soft palate and set at an obtuse angle on the shaft. It presents a semi-circular scraping double edge, which may be made to scrape upwards, backwards, and even downwards, so as to be applicable to adenoids in the pharynx. In some instances he has removed with it large pendulous vegetations for which he had previously been in the habit of employing Loewenberg's forceps. Some forms of growth, however, will always continue to require these forceps for their effective removal. For the anæsthetic he gives the preference to ether, not pushed so far as to abolish the cough reflex. The patient is placed on a level couch without pillows, his head being allowed to roll over towards the operator to the right, so that the right hand of the operator may be used while his left steadies the head. The scraper is obtainable in three sizes from the makers, Messrs. Reynolds and Branson of Leeds. The price is 7*s.* 6*d.* for each size, or 21*s.* for the set of three.

CHELTENHAM GENERAL HOSPITAL.—The annual meeting of those interested in the Cheltenham General Hospital was held on March 15th under the presidency of Colonel Croker-King. The financial statement showed that the total expenditure for the year amounted to £6060, being £962 in excess of the income. The medical report stated that during 1898 4918 out-patients were treated at the hospital and 3531 at the branch dispensary. The number of in-patients was 880. The average cost of each in-patient was £4 5*s.* and of each out-patient 3*s.* 4*d.*, a decrease as compared with previous years. The income from the private nursing establishment amounted to £1288, being £192 in excess of that in 1897. Colonel Croker-King was re-elected president.

BRISTOL GENERAL HOSPITAL.—The half-yearly board meeting of this institution was held on March 13th, under the presidency of the Mayor. The annual report stated that the daily average number of in-patients was 166·8 against 171·2 in 1897. The financial statement showed that the ordinary expenditure was £10,658 (as against £10,685 in 1897), which is £1200 in excess of the ordinary income. During the past year £2000 had been expended upon a laundry and about £1300 on alterations in the kitchen. £6464 had been received in legacies; there had been a decrease in subscriptions and collections in places of worship, but the collections from workpeople had increased.

THE LANCET.

LONDON: SATURDAY, MARCH 25, 1899.

TWO books on the highly important question of the London water-supply have made their appearance at what dramatic critics love to call the psychological moment.[1] The taking of evidence by a Royal Commission on the matter—whose proceedings have been very fully reported in the columns of THE LANCET—came to an end upon March 23rd; one Bill has been introduced into Parliament by the Government and read a second time which touches gently the fringe of the subject; other Bills promoted by the companies have passed their first reading; the Bill of the London County Council having for its object the supply of London with water from Wales has been rejected; and, lastly, politicians have imported into what should be a strictly sanitary question much party feeling of the sort which does not always find its expression in the accurate language of reasoned thought. Of Dr. SISLEY'S book we cannot say much, as it is practically a reprint of the articles which appeared in our columns throughout the year 1897. We are glad to see that the patient labour, accuracy, and impartiality which Dr. SISLEY displayed when acting as our Commissioner are recognised by reviewers whose lips are not sealed by circumstances, but we can only lay stress upon one of these qualities here—impartiality. The points upon which Dr. SISLEY gave up-to-date information in our columns were—(1) sources of supply; (2) the methods of purification; (3) the quantities supplied; and (4) the storage capacities and filtering arrangements of the eight companies; and in dealing with these points he has excluded all political and municipal questions as beside the mark, and presented an absolutely colourless series of statements within the lines defined.

Dr. SHADWELL'S small book is written from a totally different standpoint. The author holds a brief for the water companies and almost insinuates that there is no fault to be found with the metropolitan water-supply, the anxiety of Londoners on the subject being due not to the real urgency of the question but rather to the persistent misrepresentations made by the London County Council and a careless, badly informed, unscrupulous press. He accuses the London County Council, upon evidence which is very strong and very convincingly marshalled, of playing the time-honoured game of the would-be purchaser—i.e., of depreciating the value of the water companies that they may be able to buy up the undertakings at an improperly low figure. It is well that this point should be thrashed out and all good citizens will be glad to read what Dr. SHADWELL has to say here, for if blind trust in the ability and virtue of the companies is unreasoning, so is a blind instinct to fall to abusing them. Again, Dr. SHADWELL'S criticism of the scheme of the London County Council for a metropolitan water-supply from Wales will furnish arguments to a large section of the community. All timid people and some prudent people will think like him. But until the Report of the Royal Commission on the subject is issued wise people will imitate Parliament and reserve their opinion. Dr. SHADWELL'S little book, then, is a valuable contribution to public knowledge upon a controversial topic which he appears to think would not be controversial at all if the persons who hold other views than himself were honest of motive and clear of wit. We do not wholly commend this attitude, but Dr. SHADWELL manages to take it up with neatly written moderation.

The two volumes require a third to complete a trilogy that would be invaluable to all metropolitan medical men, sanitarians, and citizens who have the welfare of the great city of London in their thoughts. Dr. SISLEY tells exhaustively what the present condition of the companies is, where they get their water, how they treat it, and how they distribute it. Dr. SHADWELL takes up his cudgel, or rather draws his rapier, for the companies. Now we should like to hear from a champion designing to persuade us that some public body—perhaps the London County Council and perhaps not—should have charge of the London water-supply. In the interests of those who hold this view we would point out that such an author must be thoroughly well equipped in his facts and be able to write with force as well as with clearness and ease if he is to make an impression corresponding to that which Dr. SHADWELL'S book will produce.

THE domestic servant is an important factor in modern life. She (for we are speaking more particularly now of the female domestic servant) is in ever-increasing demand and her occupation is one for which there is an ever-lessening competition. The position is so unusual that as between herself and her mistress she threatens to become the more independent party of the two and the more able to dictate terms. It is not impossible that certain classes who now rely on servants will have to do without them eventually and that all classes will have to learn to be less dependent. There are still many fine specimens of the good old sort of servant, in whom

> "..... appears
> The constant service of the antique world,
> When service sweat for duty, not for meed"—

who appreciate good masters and mistresses and are wonderfully blind to the faults of bad ones, but this class does not appear to be so numerous as of old. Explanations vary as to the reason of this. Some fall back upon the universal explanation of all changes, good or bad—the Elementary Education Act and the board schools; some on the attraction of other forms of employment which leave young women with more liberty and spare time and perhaps with more remuneration. It is not for us to discuss minutely the explanation of all the political and economic changes affecting the position of women which have altered the conditions of supply and demand of domestic servants. It is, however, important to note that these have been altered, with the double result that the

[1] (1) The London Water-supply: A Retrospect and a Survey. By Richard Sisley, M.D. Lond. Quarto, pp. 160, with Appendices and 48 Maps and Plans. London: The Scientific Press, Limited. 1899. Price £1 1s. (2) The London Water-supply. By Arthur Shadwell, M.A., M.B. Oxon. 8vo, pp. 190, with Appendix. London: Longmans, Green, and Co. 1899. Price 5s.

classes who employ domestic servants have been multiplied and that the classes whence they are drawn have become more independent and have a much wider range of choice in selecting an employment than was the case when manufacturing industries, the Post Office and the Telegraphic Department, clerical work and board schools, did not offer occupation to women on such a large scale as they do at present.

An intelligent study of these conditions will do much to enable families and ladies at the head of families to understand the problem of getting and of keeping good servants. It is well within the experience of medical men that the worry connected with servants and with the constant changes of the domestic staff is a fruitful source of much annoyance and even of ailment among housewives. Ours is a profession which has insight into household work and its cares not vouchsafed to men of other callings. It is not, therefore, beyond our province to give a few hints with a medical bearing which may tend to make the wheels of domestic work revolve more smoothly. One thing which must strike most medical practitioners is a disposition to ignore the ailments of servants. This disposition is seen often at the time when the servant is a mere applicant for work. Mistresses who will keenly inquire into the character or temper of a girl will turn a blind eye on her state of health. Domestic servants are probably not much more subject to ailments than other people but it is an unmistakeable fact that they are not without ailments. Their life is not always a healthy one, though it might often be made more so by a little effort on their own part or good nature on the part of their mistresses. The daily routine is apt to be dull and monotonous and it may be very laborious and exhausting. Those who have only to tell a maid to do things which they can easily do themselves are very apt to abuse the relationship and to throw quite an unreasonable amount of work upon their servants. Such evil is often unintentional. It is wrought by want of thought and not by want of heart. But it is wrought all the same and the life of the servant becomes a drudgery with no leisure, no protection, no break. Servants may not be more delicate than others, but as we have said the conditions under which they work are such as to generate moodiness, perhaps ill-health, and sometimes exhaustion and disease. Besides the conditions of work which tend to generate sickness and even disease there are two other points to be taken into account—age and distance from home. A large proportion of servants, in London especially, are at sensitive ages, and a large number are far away from home; they have come from the country and from provincial towns, often from Scotland, and easily become home-sick, especially if there should be a lack of sympathy and a failure to make them feel welcome. One of the commonest of ailments in domestic servants is chlorotic anæmia and it is amazing to see how often this condition is allowed to go on without notice and without treatment where the symptoms in a child of the family would quickly command all the resources of medicine. The neglected chlorosis drifts into chronicity with consequent impaired health or reaches a crisis in a gastric hæmorrhage and so commands attention. Short of such extreme cases the health of servant maids is often sapped in a way which impairs their energy and depresses their spirits, but which would admit of complete relief if duly attended to. These are the servants, by the way, who complain of their food. It is the appetite not the food that is generally at fault, for, despite the behaviour of Mrs. Nicholls and Miss Brass, the modern servant is generally well fed—almost invariably much better fed than she ever could have been in her own home.

It will be asked what is the remedy? We have a strong conviction that the remedy lies in a little more sympathy and a little more effort on the part of families to place themselves in imagination in the servants' situation and to remember that they are of our own flesh and blood, as Mr. GLADSTONE said of the unenfranchised voters. In matters of open air and of hours of leisure servants should be treated with consideration. So far from spoiling them we believe that such consideration is appreciated by them and it certainly is necessary if they are to be kept in health. When servants fall off in health, still more if they become really ill, they should receive attention. If necessary they should be made to keep their bed for a day or more. Devices for sparing them unnecessary labour should, then, be multiplied. The absence of such ingenuity in kind and well-to-do families is often surprising. An anæmic girl will be sent up long flights of stairs on trivial errands, or a willing maid will be made to do nursing duty till her feet swell and she is on the point of breaking down. It is, we believe, no part of a master's liability to provide medical attention for his domestic servants. All the same, or, rather, all the more, it is well to provide it for them. Servants often prefer their own medical man, but few of them are insensible to the kindness of a mistress who will offer her personal attention together with the advice of the medical man whom she consults for her own ailments and those of her children. These may seem to be partial and inadequate suggestions for the solution of a great social problem, but we do not profess to speak except from a medical point of view. We believe that the alternative employments which draw girls from domestic service would not be so effective if good mistresses determined to face the problem and to make their servants feel that they are in a home where their health and their comfort are considered in a kindly and generous spirit.

IN THE LANCET of March 18th we dealt with the action which the Government have decided to take with a view to the prevention of tuberculosis in man in so far as milk is concerned; and whilst we admitted that some progress in this direction would probably result, we expressed our regret that a number of important matters were left untouched by reason of the unwillingness of the Government to ask for any new legislative powers as to tuberculosis. Since the issue of the new Order and Regulations as to Dairies, Cowsheds, &c., a very important deputation has been received by Mr. CHAPLIN and Mr. WALTER LONG, presidents respectively of the Local Government Board and of the Board of Agriculture, and this deputation raised the same question in so far as it affects our meat supplies. The deputation included

Members of Parliament and a large number of representatives of societies concerned in the sale of meat and of agricultural associations, and it was introduced by Mr. W. FIELD, M.P., who gave evidence before the Royal Commission on Tuberculosis of 1896 in his capacity of President of the National Federation of Butchers and Meat Traders of the Three Kingdoms.

The demands made by the deputation may be dealt with under three headings. Firstly, the butchers and the farmers interested in our meat-supplies asked for uniformity in the system of meat inspection and in the conditions affecting the seizure of meat on account of tuberculosis, and they alleged that in certain towns the stringency in this matter is exceptional, unnecessary, and vexatious. This demand is most reasonable and it can largely be attained by the substitution of public for private slaughter-houses in all large centres of population, by the requirement that meat inspectors shall have some skilled knowledge of their duties, and by the adoption of a code indicating that which ought to be and that which need not be seized in the interests of public health. We shall revert later to the first point. As regards the second Mr. CHAPLIN explained to the deputation that he hoped much from the circular letter which he addressed to district councils when he issued his recent Dairy and Cowshed regulations. In this circular he followed one of the recommendations of the Royal Commission and urged that no inspectors should be appointed for meat-inspection unless possessed of knowledge under three headings which he specified. Unfortunately, the unwillingness to legislate leaves this matter in the position of mere advice which cannot be enforced and we must wait to see how far it will be successful. Much the same applies to the third point, but still the matter is different. The medical officer of health must, after all, be responsible for the action he takes in seizing or not seizing a carcass or a piece of meat from a tuberculous carcass and no legislation can be expected to free him from this responsibility. But subject to this consideration an instruction of advice has now been issued in which, again following the terms of a recommendation of the Royal Commission, Mr. CHAPLIN has indicated what are the conditions of meat which should or should not be deemed to justify seizure. Most medical officers of health when giving evidence before the Royal Commission expressed their willingness to take any such authoritative statement as a guide for their action and we hope that a fair trial will be given to procedures under the new conditions. If this is done then we agree with Mr. CHAPLIN that this grievance will be practically removed.

In the second place the deputation demanded compensation for the value of carcasses seized in the interests of public health. The full bearings of this question of compensation cannot be adequately discussed in this article; it is also one as to which the Royal Commission were not unanimous. The majority, however, decided against this demand and Sir RICHARD THORNE who was one of the majority has set out in his recently published Harben Lectures on the Administrative Control of Tuberculosis the several grounds on which presumably this decision was come to. Mr. CHAPLIN only referred to three reasons which are embodied in the report of the Commission, but he particularly emphasised the fact that our vital statistics, so far as they go, tend to disprove the allegation that the production of tuberculosis through the consumption of meat is a substantial evil, and the still further fact that, although the Commissioners again and again asked for witnesses who could give them evidence of personal loss through seizures for tuberculosis, nearly all the witnesses produced, including Mr. FIELD, M.P., had to admit that in a lifetime of active business they had hardly suffered at all. Mr. CHAPLIN naturally assumed that such "weighty objections" to the system of compensation for a trade risk would have been challenged either in the minority report of the Royal Commission or by the deputation, but he found no answer from either one or the other, and hence he was not prepared to lay down the entirely new principle that a purchaser who, having bought an article at a known risk with a view of placing it on sale, "should receive the whole profit of his transaction if he has escaped loss but should demand compensation from the public if his transaction has not been fortunate." He urged, indeed, that the system of insurance such as has already been found to work well and without any burden should be adopted generally. But the deputation had come for compensation and declined, for the moment at least, to entertain this proposal.

In the third place the deputation urged the retention of private slaughter-houses and they went so far as to say they did so in the interests of the public. This attitude must have been aimed, we assume, at getting compensation for any loss that may be incurred under any new legislation, for the reasons alleged in favour of the retention of these private establishments do not bear investigation in so far as public interests are concerned. We have already referred to the provision of public slaughter-houses in another part of this article and we would recall the fact that a number of witnesses before the Royal Commission admitted that the uniformity of administration which this deputation also asked for can only be attained by the substitution of public for private slaughtering places. This is also the view taken by the Royal Commissioners whose recommendations on the subject are most clear and distinct, and we can only hope that the Government will do all they can to facilitate the erection of public slaughter-houses in all large centres of population and thus to secure that the slaughtering shall be controlled and supervised by an efficient staff.

On the whole, we doubt whether the deputation are likely to gain much so long as they take up an attitude which in one important respect is so obviously opposed to public health interests, whilst pleading, on the other hand, that they should receive compensation for action which they allege is taken in the same interests. For the present the prospect of progress in this matter of the prevention of human tuberculosis through the use of meat will mainly depend on compliance with the suggestions contained in the circular letter issued by the Local Government Board. But just as we regretted that no change or progress is proposed as regards the control of our milk-supplies in so far as tuberculosis is concerned (except that which can be effected under the existing defective law), so also we cannot but feel disappointed that in the matter of our meat-supplies

the Government also limit themselves to mere advice instead of acquiring new statutory powers to deal with the whole matter in a comprehensive manner.

Annotations.

"Ne quid nimis."

THE PRESIDENCY OF THE ROYAL COLLEGE OF PHYSICIANS OF LONDON.

THE choice of a President by the Fellows of the Royal College of Physicians of London is a matter which no longer concerns merely the select circle of that body, for the position which the College holds in the medical world, the important part which it plays in conferring diplomas to practise, not to mention its influence in the promotion and maintenance of a high standard of ethics, have given a wide interest to those occasions when a change has to be made in the occupant of the Presidential chair. That such a change is about to take place is no secret. Sir Samuel Wilks, the eminent and highly esteemed physician who has borne the burden of office since he was called to fill the vacancy caused by the illness of the late Sir J. Russell Reynolds, has earned a well-merited retirement after three years' service and will carry with him the sincere thanks and good wishes of the College. When the Comitia meets on March 27th some difficulty may be experienced in arriving at a decision of the question—who shall be elected to fill the Presidential chair? Many physicians have been mentioned as eminently qualified to hold office. Other things being equal, no doubt seniority of standing and past services rendered to the College will have due weight in guiding the choice of the Comitia. Again, owing to the high position which the President of this College holds as the leader of English medicine other reasons than those based on purely professional distinction will no doubt have considerable influence in determining the result of the election. Amongst those who may reasonably be expected to receive support are Dr. F. W. Pavy, F.R.S., who was elected a Fellow in 1861; Dr. W. H. Dickinson, elected in 1865; Sir W. H. Broadbent, F.R.S., elected in 1869; and Dr. W. S. Church, elected in 1870. The scientific attainments and personal attributes of these gentlemen are so well known that we have no doubt that any one of them would discharge the duties of President with ability and discretion. Dr. Pavy's researches in the physiology of digestion, and especially his illuminating work on diabetes, which have been pursued for many years, Dr. Dickinson's pathological investigations and his recent occupancy of the Presidential chair of the Royal Medical and Chirurgical Society, and Sir William Broadbent's contributions to clinical medicine and his enthusiastic support of movements for the furtherance of public health and education will all doubtless be recalled when the choice is about to be made; whilst the services of Dr. Church within the College itself and his intimate acquaintance with its affairs give him a high claim to its chief office. In addition to the above the names of other distinguished Fellows suggest themselves and will doubtless secure support on this occasion, such as those of Sir R. Douglas Powell, Sir Dyce Duckworth, Dr. Gee, Dr. Hughlings Jackson, and Dr. Charlton Bastian.

FOOD POISONING.

THE following case, related by M. Louis Rénon at the meeting of the Société Médicale des Hôpitaux on Feb. 17th, is important as a contribution to the comparatively unknown subject of food poisoning and interesting on account of a very uncommon symptom—arthritis. M. Rénon remarked that various chemical agents—lactic acid, the poisons of uræmia, uric acid, tuberculin, and therapeutical serums—may cause "pseudo-rheumatism." So may food poisoning; in 1760 Boissier de Sauvages wrote: "Fish caught in the island of Bahama excite violent pains in the joints of those who eat them. These pains terminate in a certain time in a sensation of itching which lasts three days." But arthritis from such a cause as exemplified in the following case is not common. A young man, aged 20 years, had a mild attack of influenza; on the third day the temperature was normal and the pains had disappeared. He took at lunch on the fourth day a small portion of chicken, a sole, and a dozen oysters. A few hours afterwards he had a feeling of weight and pain in the abdomen. Urticaria appeared at 6 P.M. and during the night he became covered with large wheals; on the following morning they were retrogressing, but movement of the left arm was painful, and the right hand was œdematous on the dorsal surface, red and painful, and every movement caused him to cry out. The metacarpo-phalangeal joints of the index finger and the little finger were swollen; they were very tender to pressure and to the least movement of extension or flexion. The sheaths of the extensor tendons were equally tender. The wrist presented the same pain on the least movement. Supination, flexion, and extension of the forearm were painful, but the pain was less than in movement of the other joints. There was no fever. The tongue was indicative of dyspepsia and the abdomen was a little tympanitic. There had been constipation for 36 hours. The other organs were normal. "Pseudo-rheumatism" due to poison by the oysters or fish was diagnosed. The treatment consisted of milk diet, purgation, and the drinking of large quantities of fluid. On the fourth day of the poisoning the eruption and the œdema of the hand had disappeared. The metacarpo-phalangeal joints and the synovial sheaths were not painful, but the pain persisted in the wrist and elbow. On the sixth day all the symptoms had gone. What was the nature of the articular and tendinous inflammation? Acute rheumatism was excluded in consequence of the absence of fever, the rapid evolution, and the other signs of gastro-intestinal intoxication. Influenza was not the direct cause, because it had lasted scarcely 24 hours, was extremely mild, and had passed off two days previously. Perhaps the influenza had led to slower elimination of the poisons. The gastric symptoms and the urticaria point to the fish or oysters as the cause. Curiously the arthritis developed in the places first attacked by urticaria but it did not recede as rapidly.

THE REGISTRATION OF STILLBIRTHS.

WE have received a copy of a petition to be presented to the House of Commons from the members of the British Institute of Undertakers with regard to the present requirements for the purpose of interment of a stillborn child. The petition shows that at the present time all that is necessary is the production to the cemetery authorities of what purports to be a certificate of the delivery of such stillborn child signed by a medical practitioner or a midwife, no registration with the district registrar being required. It further points out that there can be no ready means of testing the veracity of such certificates, written as they often are on scraps of paper or even in pencil, and yet as a rule they are accepted by most of the cemetery authorities without demur. The British Institute of Undertakers believe, and we can well imagine that such is the case, that the present method of certifying the birth of a stillborn child is open to serious abuses which could be avoided by a proper certificate being issued by a proper authority. We have on several previous occasions drawn attention to this

anomalous and dangerous state of things and the whole question was considered by the Select Committee of the House of Commons for the Improvement of Death Registration and Certification. In their report issued in 1893 they stated: "There is reason to think that if statistics upon the subject could be obtained it would be found that the number of children buried in the United Kingdom annually as still-born is enormous." The Committee recommended that still-births which had reached the stage of development of seven months should be registered upon the certificate of a registered medical practitioner and that it should not be permitted to bury or otherwise dispose of such a body until an order for burial had been issued by the registrar. This recommendation would apply apparently only to stillbirths of seven months or upwards, but such form but a proportion of the whole number. It is estimated that the total number of stillbirths in England and Wales reaches 45,000 per annum. What percentage of these reached the period of seven months it is impossible to say, but obviously a very large number must be below that age. In the Parliamentary Return issued to the House of Commons in June, 1893, and analysed by us at the time, it was shown that in a large number of countries the registration of stillbirths is compulsory and is carried out by the authorities who register births and deaths. The only remedy for the existing state of things and its possibilities of serious abuse is the adoption of some such compulsory system. The difficulties, however, in carrying it out would be very great. At the present time no registered medical practitioner attends at the majority of stillbirths, probably a half or more are attended by midwives, and in a great many cases not even a midwife is present. Who is to certify such cases for registration? Then, again, the difficulty of exactly defining a stillbirth is no light one and in the report referred to the definitions adopted by the different countries are exceedingly numerous and varying. If the duties implied by such legislation are to be carried out by general practitioners or by a public official, such as a medical officer of health, it will mean a great increase of work and responsibility and a corresponding increase in the cost of registration, since it is obvious that some fee would have to be charged for the certificate which in very many of the cases the parents would be unable to pay and it is exceedingly doubtful if Parliament would sanction any scheme involving such a large increase of expenditure. Still, if compulsory notification of stillbirths can be carried out in such countries as Norway, Sweden, Denmark, and Italy, it should certainly be possible in the United Kingdom, and the British Institute of Undertakers have our best wishes for success in their laudable endeavour to promote legislation upon this most important question.

THE IRISH MEDICAL SCHOOLS' AND GRADUATES' ASSOCIATION.

THE St. Patrick's festival dinner of the above association, given at the Café Monico on March 18th, under the presidency of Sir William Thomson, F.R.C.S. Irel., was a very great success. The company numbered about 250. The guests of the evening, who were numerous, will long regard it as one of the best dinners and one of the most brilliant gatherings at which they have been present. The music was good, the speeches were far abcve the average of after-dinner oratory, and the room was graced by the presence of ladies. We have often heard the question of the presence of ladies at such dinners discussed and sundry arguments advanced against it. One thing is certain—that on this occasion they did not hinder any of the ordinary parts of the entertainment. Among the guests were General Sir George White, V.C., G.C.B., G.C.S.I., G.C.I.E.; General Sir Thomas Gordon, K.C.I.E., C.B.; and Sir Dennis Fitzpatrick, K.C.S.I. The medical profession was well represented by Sir William MacCormac, Bart., K.C.V.O., President of the Royal College of Surgeons of England; Inspector-General William Lloyd, R.N.; Sir William Gowers, Professor Alexander Macalister, F.R.S., and others. Sir William MacCormac, in proposing the health of the guests and alluding specially to the guest of the evening—Sir George White—spoke in high terms of the Indian army as one of the most important armies in the world, ready for anything and for any emergency. The acts of devotion and the feats of daring which it performed came to us muffled by the distance of the far off fastnesses in which they were performed and by the absence of reporters of sensational incidents. But India had been the scene of our greatest triumphs not only in arms but in government, and the humanity and consideration of our rule had won the respect of the various races which owned our authority. Professor Alexander Macalister proposed "Our Defenders" and did so with his usual grace of speech and fund of illustration. The toast was responded to by Sir Thomas Gordon in an admirable speech in which he paid a high tribute to the medical element in the services. It is no disparagement to other speakers to say that the speech of the evening was that of Sir George White who spoke like a soldier who has played a great part in a great field of labour and responsibility, and he followed the example of Sir Thomas Gordon in eulogising the medical care of the sick, especially after the late operations on the North-west Frontier, where the wounded had to be conveyed for 100 miles under great disadvantages alike of climate and carriage and yet showed a high average of recoveries. We congratulate the association on the success of their festival dinner. Previously to the dinner the annual meeting was held when the report for the year 1898-1899 was read The Council congratulated the association upon the good work done during the year, especially with regard to the desirable reforms asked for in the position of the Irish Poor-law medical officers. The association had a balance of over £96. After the election of sundry gentlemen as new members and the usual votes of thanks the meeting terminated.

RETROBULBAR NEURITIS.

THE February number of the *American Journal of the Medical Sciences* contains an article by Dr. William Sym of Edinburgh on the imperfectly studied subject of Retrobulbar Neuritis. The term was introduced by von Graefe to indicate optic neuritis arising primarily in the nerve or by continuity with other parts, and not from intracranial pressure. As in some cases there were no ophthalmoscopic changes the lesion was referred to a portion of the nerve behind the eye. According to Mr. Gunn, "rapid failure of vision, usually in one eye only, often accompanied by pain and tenderness in the neighbourhood, absence of early ophthalmoscopic changes, and a tendency to recovery, are the usual prominent features." The failure of vision is of a peculiar type; it is principally or solely central; its degree varies from a loss of definition to complete loss of light perception. In the less severe cases there is central loss of colour perception; blue and yellow may be fairly correctly seen whilst red and green are lost and appear as yellow and white respectively. In bad cases there is central loss of all colour perception. Many patients say that whilst vision is bad in the bright hours of the day it improves in the evening. It is not probable that there is improvement in visual acuity though the patients see better in the subdued light, possibly on account of exhaustion by the brighter light of the affected fibres. Vision is better after a night's rest but worse on fatigue or fasting. The patient is apt to complain of a fog or mist before the eye. A symptom present

in a considerable proportion of cases of ordinary neuritis and first described by Dr. Hughlings Jackson—temporary, almost momentary, attacks of blindness—is never found. As to the description of retrobulbar neuritis as usually unilateral Dr. Sym thinks that its truth depends on whether toxic amblyopias are regarded as a variety. Apart from this, retrobulbar neuritis not infrequently affects both eyes consecutively. Ophthalmoscopic signs are usually absent early and may be, but are not usually, absent altogether. But they are trifling in proportion to the loss of vision in contrast to ordinary optic neuritis where the ophthalmoscopic signs may be great and visual symptoms absent. The prognosis usually is good; improvement is to be expected in a few weeks or even days, which sometimes coincides with the appearance of ophthalmoscopic signs, so that curiously sight is improving whilst the signs are getting worse. In a large proportion recovery seems to be complete, but in some a decided and perhaps an absolute scotoma remains permanently. The unilateral cases may be due to the spread to the nerve of local inflammation, or to syphilis, rheumatism, gout, or malaria. They do not differ essentially from the bilateral except in the tendency to recovery. The latter occur in diseases of the spinal cord, especially locomotor ataxia, disseminated sclerosis, and general paralysis of the insane; they include hereditary optic atrophy and toxic amblyopias. The treatment of the unilateral cases consists in attacking vigorously the constitutional cause—in rheumatic cases by purging, salicylates, and blistering the temple. Action of the skin and kidneys must be encouraged. Pilocarpine subcutaneously will be found as useful as in persistent scleritis. Some believe in iodide of potassium and mercury even in non-syphilitic cases. In the longer-standing cases, especially those more nearly allied to atrophy, strychnine is chiefly relied upon, but it has little influence.

THE LIVERPOOL MEDICAL INSTITUTION.

AN interesting ceremony took place at the Liverpool Medical Institution on March 15th, when Dr. John Cameron, the senior physician to the Liverpool Royal Southern Hospital, was presented with a congratulatory address upon his attaining the sixtieth year of his membership of the society. The occasion was looked forward to with much interest by the members and associates, as Dr. Cameron's connexion with the society had extended over a period which had not been reached by any of his predecessors or compeers. At the invitation of the President (Dr. W. Macfie Campbell) and the Council, a large number of members and associates attended to do honour to their veteran colleague who on the auspicious occasion happily appeared to be in robust health. The address, which was handsomely illuminated, was read by Dr. John Birkbeck Nevins, the member of the society next in point of seniority, and was in the following terms:—"To John Cameron, M.D., F.R.C.P. The members of the Liverpool Medical Institution desire to congratulate you on attaining the sixtieth year of your connexion with the society. We wish to thank you for your long services as trustee, councillor, and as president in 1872, when you worthily upheld the dignity of the chair and of the profession. As physician to the Royal Southern Hospital for a long series of years you have shown enthusiastic and unwearied devotion to clinical work and to the good of the charity. As head of the consulting branch of the profession your conduct has always been marked by a high sense of honour and courtesy to your medical brethren. We wish you many years of useful life in our midst, and we take the opportunity of this anniversary to assure you of the esteem and regard of your fellow members, to whom your career will always remain a conspicuous example of professional integrity." The address was signed on behalf of the members by W. Macfie Campbell (the President), John M. Hunt (honorary general secretary), and William Thelwall Thomas (honorary secretary of ordinary meetings). Dr. Nevins said that among his early recollections of the institution in which Dr. Cameron took a leading part the society at first met in an upper room. It was not an uncommon experience for the meetings to be postponed in consequence of the necessary quorum of seven members not being present. In 1848 the average of attendances at the ordinary meetings was 14, whereas now the average is 80. Dr. Nevins eulogised the marked industry which characterised Dr. Cameron during a long life and urged the junior members to follow his example. Mr. Edgar A. Browne spoke on behalf of the ordinary members and said that the occasion was a red-letter day in Dr. Cameron's life and in the history of the Liverpool Medical Institution. Such an occasion was probably unique in the history of any society in having an active member for such a long period as 60 years; but Dr. Cameron came from a race of men of strong natural fibre and his honourable life is an example to be followed. Dr. William Permewan made further congratulatory remarks on behalf of the junior members of the society. Dr. Cameron, in his reply, expressed his grateful thanks for the honour conferred upon him, which he accepted as a mark of personal regard. He described the early struggles of the society and paid a generous tribute to its founders of the year 1837. It was now in a condition of prosperity, possessing upwards of 300 members and associates, and he personally had derived great benefit from his membership. The presentation of the address was preceded by a conversazione which was numerously attended.

THE LATE LORD HERSCHELL AND THE JENNER SOCIETY.

AT a recent meeting of the Jenner Society held at Gloucester it was unanimously resolved to send to Lady Herschell the following expression of appreciation of the great service rendered to his country by the late Lord Herschell as President of the Royal Commission on Vaccination:—

"The President and members of the Jenner Society, whilst uniting in the general expression of deep regret for the death of the late Lord Herschell and of warm appreciation of the great services he in so many ways rendered to his country, desire especially to record their high sense of the singular ability, the perfect impartiality, and the untiring patience with which, as President of the Royal Commission on Vaccination, he for seven years conducted an important and difficult inquiry, with the firm determination, as he himself subsequently said, 'to follow boldly the facts which experience disclosed, whithersoever these might lead,' and with the earnest desire, when the truth had been established, to so apply it as might be most beneficial to the public health."

The resolution is signed by the President (the Earl of Ducie, Lord-Lieutenant of Gloucestershire), the Chairman of the Executive Committee (Dean Spence, D.D), Mr. G. E. Lloyd Baker (High Sheriff of Gloucestershire), and Dr. Bond (the honorary secretary).

VACCINATION CERTIFICATION IN SCOTLAND.

A TRIAL has recently taken place at Inverness in which a medical man, Mr. John Lamont, was charged with having issued false certificates of successful vaccination during the time that he was medical officer of the parish of South Uist, between August, 1897, and July, 1898. As a matter of fact Mr. Lamont's custom was to vaccinate children and then rely upon a statement of success from the parents, a minister, or a schoolmaster. On receiving this he signed the form for successful vaccination. Various other practitioners in Inverness stated that they did the same thing. This,

however, does not make the practice right. As a matter of fact, no one man could possibly undertake the duties of a Highland island district with any real chance of doing the work properly. It is beyond human capabilities to do so. Mr. Lamont worked heroically through an epidemic of typhus fever and won commendations from the Local Government Board for his heroism. Not only did he visit the sick, but he nursed them and even when they died put their bodies into the coffins because no one else would do so. He does not seem to have got on with the parish council and was dismissed in July, 1898, by that body. In the following September he was arrested on the charges mentioned above. He was apparently ignorant of the rules laid down by the Local Government Board, for the parish council had never sent him a copy. And as a matter of fact, although 16 certificates were said to be wrong it did not come out in evidence that they all were so. The jury unanimously brought in a verdict of "Not guilty" and allowed Mr. Lamont's expenses.

CRIME AND THE RESPONSIBILITY OF THE PRESS.

WHEN a crime is chronicled in a certain section of the press in such a manner as to minister to the taste of morbid sensationalism it is safe to predict that within a few weeks or possibly a few days only the world will hear of another crime whose details correspond with the accounts of the previous one. Recently the news was received from America that two members of a well-known New York club had received through the post a bottle purporting to contain medicine but which really contained a salt of mercury, the object being to poison the recipients. Two deaths resulted. Now we hear that an inmate of Leavesden Pauper Lunatic Asylum has met with her death in a similar manner. In this case, however, the drug was sent in a parcel of cake. A forged letter written by an illiterate person was received by the deceased before her death. That the second crime is an imitation of the first one is highly probable. The idea of sending poisons through the post is a novel one and it is unlikely that an ill-educated person would conceive it without having some example before him and in this case there can be little doubt that the example was that of the Knickerbocker Club crime, accounts of which have been copied into English journals. That section of the press, especially of the American press, which seizes upon stories of crime and paints them with all the icteritia of which the "yellow" reporter is capable must certainly be held responsible for a great amount of harm. It is well within the reach of possibility that weak-minded people who perhaps have often thought of committing a crime but who have not had the courage or the wit to put their thoughts into practical effect should be stimulated by sensational accounts of successful criminal exploits to do that which otherwise would have remained a creature of their imagination. It is the old story—

> "How oft the sight of means to do ill deeds
> Makes ill deeds done."

HISTOLOGY OF THE SKIN.

IN the second number of the *Comptes Rendus* for 1899 M. Ranvier gives the results of his long-continued microscopical observation of the structure of the skin in man and in the lower animals. The succession of layers of the epidermis as now generally admitted is the stratum corneum or external or superficial desquamating layer, the stratum lucidum, the granular layer, the Malpighian layer, and deepest of all, resting on the dermis, the basilar generating or germinal layer (stratum germinativum), so-called because when uninjured the other layers of the epidermis can be derived from it. According to M. Ranvier the layer that is just beneath the stratum granulosum of Langerhans—that is, the Malpighian layer—is characterised by the presence of numerous fibrils embedded in the cell protoplasm and he has therefore named it the stratum filamentosum. The filaments are not affected by water even when boiling; they swell in acids and in alkalies and become coloured violet with hæmatoxylin and red with carmine. With thionine they assume a pale green tint or remain uncoloured, though this renders the cell protoplasm of an intense violet colour. The filaments are not therefore simply processes of protoplasm. They are doubly refracting. Like the granules of eleidine in the stratum granulosum or like starch grains they are products of cell activity. In regard to the stratum lucidum of Oehl and Schroen, M. Ranvier finds that it is in reality double. To demonstrate this sections of skin made after immersion for an hour in osmic acid, then for 24 hours in alcohol, are coloured with picrocarminate and examined in glycerine. The eleidine is not coloured because it has undergone osmic metallisation. The true stratum lucidum is not coloured either by the carmine or by the osmic acid, but immediately beneath it and above the stratum granulosum is a thin layer which assumes a bright-red colour. It is composed of only two or three layers of transparent cells. Its external surface is smooth, the internal is festooned. It is this layer which in M. Ranvier's opinion really separates the two chief layers of the skin, the only ones formerly admitted—viz., the corneal layer and the Malpighian layer. M. Ranvier names it the stratum intermedium. It is remarkable that although it colours so deeply with carmine it does not colour at all with purpurine. After hardening in alcohol it remains uncoloured with thionine whilst this stain colours the stratum corneum verum green and the stratum filamentosum violet. The nuclei of the cells of the stratum intermedium are atrophied and their investing membranes present epidermic fibrils which are wound like the threads in a cocoon. According to M. Ranvier, then, no less than seven distinct layers can be demonstrated by the aid of staining agents to be present in the epidermis. These are named, beginning with the deepest which is in contact with the dermis, the stratum germinativum, stratum filamentosum, stratum granulosum, stratum intermedium, stratum lucidum, stratum corneum, and stratum disjunctum, which last is formed by the superficial desquamating cells.

CONDENSED SEPARATED MILKS AND FALSE DESCRIPTIONS.

ON March 20th Mr. Walter Long, the President of the Board of Agriculture, received a deputation upon the subject of the Sale of Food and Drugs Bill. The deputation consisted of representatives from various provincial and metropolitan local authorities and their object was to ask for the insertion of a clause in the Bill making it obligatory for manufacturers to label tins of condensed, separated, or skimmed milk so as to indicate that it was not fit food for children or invalids. The deputation was introduced by Mr. Radcliffe Cousins, chairman of the Camberwell Vestry. Mr. W. W. Stocker of Willesden said that in a period of four weeks infant mortality in Willesden had reached 40 per cent. chiefly through deaths from diarrhœa caused by bad feeding. He considered condensed separated milk useless for infants' food. Mr. Cassall, the public analyst of Kensington, gave evidence as to the poverty of some condensed milk. Mr. Long said that if the public liked to buy a thing they must be allowed to buy it. The Government could not put shackles on the public for this purpose. The safest line for the public and the Government was that the public should know what they were buying. We quite agree with this last remark, but will the Government take steps to ensure this very desirable result?

Will they, for instance, make it obligatory for those who sell mixtures of chicory and coffee not only to label the tin or packet to the effect that it contains a mixture of chicory and coffee but to state the exact proportions of each? Likewise upon the fabric known as "union" the exact proportions of linen and cotton should be stamped. It is keeping knowledge from the purchaser to sell such fabric either as linen or cotton, for it is neither wholly one nor the other; and so with very many other articles, such as ivorine, leatherette, amberoid, and the like. Every article made of celluloid should be marked in some way to tell the purchaser that it is inflammable, especially in the case of celluloid cigarette-holders; or, still better, the sale of these last should be prohibited. With all due respect to Mr. Long, the essence of a Government is to put shackles on the public. The Sale of Food and Drugs Bill as it stands at present is wrong and unsound and we earnestly hope that the Grand Committee will amend it thoroughly or else that it will be thrown out.

THE FATAL CASE AT BALLINCOLLIG BARRACKS.

WE cannot feel surprised that the deplorable circumstances attending the death of a young soldier of the 17th Lancers whilst undergoing confinement in a prison cell at Ballincollig Barracks, near Cork, were made the subject of earnest inquiry and debate in the House of Commons on March 17th. Mr. MacNeill, who introduced the matter, spoke in indignant terms about the punishment system of the army generally and particularly of the treatment which had been dealt out to the trooper in question. Mr. Wyndham replied in sympathetic terms and expressed his regret at the loss of a young soldier so soon after his entering the service, but he said that the most searching inquiry had been made into the case and he then proceeded to detail the facts connected with the occurrence. We may say at once that, so far as Major Fortescue, the officer commanding, and the military officers were personally concerned they seem to have acted with proper care and discretion, and it appeared to be generally admitted that they were quite blameless. With regard to the acting medical officer—for it was a civilian practitioner who was in medical charge of the troops and responsible for reporting as to the health or otherwise of the soldiers in question—the same unanimity of opinion did not apparently prevail. Notwithstanding the attention which was given to the subject in the House of Commons we are somewhat in doubt, however, as to what was the exact nature of the complaint from which the soldier was alleged to have been suffering. The immediate cause of death as determined by the post-mortem examination is stated to have been cardiac thrombosis, but we are not told whether there was any pre-existing valvular disease of the heart, such as might have been reasonably expected to have been discoverable on medical examination. The fact of the poor young fellow having suddenly died showed that he was not at the time in a fit condition to undertake shot drill or indeed to undergo any punishment; on the contrary, the hospital would probably have been the proper place for him under the circumstances. But without knowing more of the detailed medical history of the case than we do we cannot say, of course, whether there was any error in diagnosis attributable to defective medical examination or not. Mr. Wyndham did not admit the existence of anything blameable in this respect, whereas Mr. Carson apparently thought otherwise and that the matter was one for further examination. On the general question as to the employment of civil practitioners in the case of a small number of troops Sir H. Campbell-Bannerman made some sensible remarks and with reference to the unfortunate case under discussion he particularly urged that if the examining surgeon had been a military medical officer, accustomed to see cases of malingering, it might have been said that he took a harsh view, whereas in this case the soldier could have laboured under no such disadvantage for a civil practitioner would be perfectly unbiased. There is only one thing connected with this unhappy occurrence which forms a legitimate subject of congratulation and that is the assurance of the Under-Secretary for War that a large reform in the treatment of military prisoners is under consideration. The whole subject, as it seems to us, of army crime and its punishment requires to be thoroughly reconsidered and revised at the present time.

LEGAL ASPECTS OF CHRISTIAN SCIENCE.

IN the *North American Review* for March an article by Mr. W. A. Purrington is devoted to Christian Science and its Legal Aspects. It is of interest because, apart from considering the possibility of dealing with the so-called Christian Scientists under the criminal law, it gives enough quotations from the works of the enterprising lady who founded the sect to enable those who care to do so to obtain a bird's-eye view of its absurdities. "Christian Science" has hardly as yet made sufficient headway in London to earn the distinction of an article to itself in a leading monthly magazine and beyond its not very numerous fashionable converts and the more curious of their friends its existence was hardly appreciated until the recent deaths of two gentlemen, one being a prominent journalist and novelist, for a time compelled public attention to the new Act. The legal proceedings which followed the death of Mr. Harold Frederic proved that it will only be in rare cases that persons allowing those immediately connected with them to die in the hands of Christian Scientists without medical aid will become liable to conviction for manslaughter and the "healers," as the persons who let Mr. Frederic die are called, seem likely to enjoy equal immunity. This is because the "healers," in this country at all events, prudently refrain from undertaking the cases of children who are, fortunately for themselves, protected in some measure by statute. We grant that the Act of Paliament does not prevent the Peculiar People from letting their children die with comparative impunity, but then these persons have always impressed the judges who have tried them with the genuineness of their religious motives. In addition, however, to the more serious penalties attaching where death supervenes there is always in the case of quacks the possibility of a disappointed dupe prosecuting for the obtaining of money by false pretences, or, dupes being always slow to proclaim their folly, of those persons to whom the protection of the public is entrusted prosecuting for the attempt. Should any such measure be resorted to against the Christian Scientists their published documents would seem to supply the necessary material. Like so many of their fellows they find it profitable to print details of so-called "cures"—those cited by Mr. Purrington including a child (in America, no doubt, where they still attend children) who on being lifted from his cradle and kissed was at once cured of inflammation of the bowels, and a lady who was relieved of heart disease and dropsy upon the founder of the sect receiving a letter from the patient's husband. But the police, who are ever ready to attack the gipsy who makes half-a-crown by the venerable and comparatively harmless fraud of telling a servant-girl's fortune, stand by and permit abortionists and quacks of all kinds to openly advertise their wares with quite as absurd "cures" to support them and seem hardly likely to interpose at present, while Christian Scientists are no doubt wary enough to keep outside the narrow confines of our Medical Acts and to avoid

such dangers as may be run by those not notifying the presence of infectious disease. On the whole, then, allowing for slight differences in our law, we agree with Mr. Purrington that these persons not infrequently offend against the criminal law, and that their prosecution, though not very likely to take place, is desirable owing to the enlightening effect it would have on the public. As he aptly observes in conclusion, "publicity will destroy the cult far more quickly than legislation." Legislation certainly seems superfluous if the existing law be adequate and if it be adequately enforced.

THE EVILS OF SNOW.

A MORE or less heavy fall of snow is not without its effects upon the public health in an unfavourable direction, due in general to an augmentation of respiratory diseases. In towns a fall of snow is particularly disagreeable since it soon settles down on the pavements of our streets and in the roadway into a highly chilling muddy slush. It is the readiness and eagerness with which slush absorbs heat in the act of liquefying which renders it so dangerous to the health of those who are obliged to walk through it. Again, it is a notorious fact that however proof a leather boot may be against rain it seldom proves a barrier against the percolation of water derived from the melting of snow. This is probably due to the effect of the intense cold of snow making the leather, so to speak, crisp instead of supple owing to the oil in the leather which makes it supple becoming congealed. In this way probably leather loses its most valuable quality. A useful precaution is to grease the boot outside with an oil of comparatively low melting-point as, for example, goose grease or some mineral oil. A fall of snow, however, is not without some compensatory advantages. It rapidly clarifies and purifies the air. An analysis of snow shows the presence of an enormous proportion of organic impurities and bacteria which are swept out of the air by the descending particles. Again, the friction of snowflakes with the air gives rise to the formation of ozone. The smell of ozone in the air after a snowfall is very marked. We are pleased to note that our vestry authorities on the occasion of a moderately heavy fall of snow in London last Tuesday were on the alert to remove the horrible slush as it accumulated. The City streets were scrupulously clean within a few minutes of the cessation of the fall. This is as it should be, for the presence of a wet freezing mixture in our streets is a source of extreme discomfort and danger to pedestrians.

SANITATION IN HOTELS.

THERE is a praiseworthy tendency at the present time to devote especial attention in a sanitary sense to all places where the public aggregate, and perhaps the best example of this tendency is to be found in the regard which is now being paid to the conditions under which children at ages susceptible to infectious disease are gathered together in our public elementary schools. It is, however, important that we should not in our zeal for the health of the little ones altogether overlook the conditions under which a not inconsiderable number of adults at the bread-winning ages spend a great part of their existence. In the hotels of our great and small towns men in the prime of life and having families dependent upon them are nightly housed under conditions which are often far from satisfactory. The ventilation of their bedrooms, especially in the older hotels, is often highly defective and the other sanitary arrangements are liable to be if not altogether primitive in principle, approximately so in practice. The so-called water-closet often may be found ventilating only into an inside passage, itself close and stuffy, while the pan of the closet is old-fashioned in type and the water-supply is *nil*. Furthermore, the pungent odour which arises when the handle of these old-fashioned closets is manipulated bears evidence to the fact that the soil-pipe is imperfectly (if at all) ventilated and that the "container" is coated with filth. Often, too, in this same closet is a defectively trapped lavatory basin which yields a highly offensive smell. It is under conditions such as these that opportunities are afforded for contracting disease, opportunities which are much accentuated by the fact that the lighting of these closets is often extremely defective and hence cleanliness is all but an impossibility. It is difficult to understand why more attention is not devoted to this matter by the officers of local sanitary authorities. A periodical visit would do much to bring about a better state of affairs.

IRISH POOR-LAW MEDICAL SERVICE.

ON March 16th a deputation nominated by a public meeting recently held in the Royal College of Surgeons in Ireland was received by the Local Government Board. Sir Thornley Stoker who introduced the deputation said that they came on behalf of the Irish Poor-law medical officers backed by the authority of the largest meeting of the Irish medical profession that had ever been held in Ireland. They only wanted reasonable reforms and by far the most important was the question of superannuation. Dr. J. W. Moore referred to the necessity of allowing travelling expenses. Sir William Thomson referred to the abuse of visiting tickets which were given out without any care. He mentioned one case in which a dispensary medical officer who was summoned on an urgency ticket travelled 10 miles and was shown a pig as his patient. Another medical man was summoned on one occasion to see a cow by a ticket filled in by the owner. On another occasion he had to go out to see a donkey. In this case the chairman of the committee signed the ticket. The Vice-President gave the usual official reply that the Local Government Board would give the matter every consideration. We hope that they will not only consider the question but see that the lot of the Irish dispensary medical officer is made less hard; but we are glad to see that the Local Government Board have intimated to the Cork Board of Guardians that Poor-law medical officers are to have a month's holiday and that substitutes are to be paid by the guardians. We would refer our readers to our issues of Jan. 7th, 14th, and 28th, in which we gave an account of the many hardships under which these practitioners labour.

PATHOLOGICAL CHANGES IN THE NERVOUS SYSTEM IN DELIRIUM TREMENS.

IT is not often that cases of delirium tremens end in a fatal issue if occurring in otherwise healthy subjects free from cardiac, arterial, pulmonary, and renal disease. Uncomplicated fatal cases are rare, and till recently have not been minutely investigated as regards the microscopic and pathological changes which take place in the brain and which render these patients restless, terrified, and subjected to visual and horrifying hallucinations and insomnia, and produce general muscular weakness and tremor of the hands, lips, tongue, &c. Two such cases recently investigated and published by Dr. Ewing[1] of Columbia University (New York) are noteworthy. In one the patient was a young man, aged 25 years, who drank heavily and who was in a state of intoxication for six weeks, finally dying from delirium tremens with exhaustion and pyrexia; the temperature rose to 104° F. before death. In the other case, a man, aged 29 years, from

[1] Archives of Neurology and Psycho-pathology, vol. i., No. 3 (pp. 343-5), 1898.

similar indulgence extending over three months (12 weeks), during the whole of which period he was said not to have been sober, also died from delirium tremens, the temperature before death rising as high as 105°. Post-mortem examinations were made soon after death—in six hours in one case and in twelve hours in the other. Intense and general capillary congestion was found in the brains of both subjects. Sections of the brain, medulla, and spinal cord which were made after hardening in Lang's fluid and were stained with Nissl's methylene-blue method gave very striking and instructive changes. To begin with, the great "motor" cells of the cord and medulla were extensively affected and were nowhere normal. The "chromatic rods"—the normal stored-up pabulum of the nerve cell which is used up during functional activity—were almost entirely disintegrated and destroyed or absent in these cells. In many other cells this "chromatolysis" was even more advanced and the cell body showed transparent areas (hyaline degeneration). Further, the outlines of many cells were irregular and ragged (erosion of surface) and the nuclei were dislocated from their normal position, sometimes so markedly as to project from the side of the cell body. Similar chromatolytic changes but to a less extent were found in the cerebellum (Purkinje's cells). In the hemispheres the cortical pyramids (archyochromes) failed to exhibit the usual network or striated arrangement of these rods, and those which were present were either feebly-coloured and indistinct or broken up into coarse granules. In the second patient (three months' intoxication) these changes were more marked. Dr. Ewing compares these changes in delirium tremens with those of acute experimental alcoholic poisoning in animals and decides that the former changes are more marked. The nervous symptoms of delirium tremens are ascribed in large measure to the profound nutritive changes (as revealed above) which alcohol produces and which give rise to restlessness, tremor, insomnia, and pyrexia before they end in a fatal issue. The investigation of cerebral changes in sub-acute and chronic alcoholism described by Andriezen in this country (with the use of Golgi's and Nissl's methods)[2] and by Berkley in America (with the same methods),[3] combined with Dr. Ewing's present research, must serve to show the importance of this branch of neurological investigation and to encourage further work in this direction as regards the cerebral pathology of alcoholism.

THE spring meeting of the Northern and Midland Division of the Medico-Psychological Association will be held at the County Asylum, Hatton, near Warwick, on April 12th. Members intending to be present should communicate with Dr. Crochley Clapham, The Grange, near Rotherham.

AT a meeting of the Cremation Society held at Grosvenor House on March 15th Sir Henry Thompson, the President, delivered an address upon the career of the society from its inception to the present time.

H.R.H. THE DUKE OF CAMBRIDGE will preside at the annual dinner of the Sanitary Institute to be held at the Whitehall Rooms on May 2nd.

THE sittings of the Royal Commission on the Water-supply of London came to an end on Thursday, March 23rd.

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[2] Brain, 1894. [3] Ibid., 1895.

MEDICAL MAGISTRATE. — Mr. Edmund West Symes, M.D. Edin., M.R.C.S. Eng., of Halifax, Yorkshire, has been appointed a magistrate for that borough.

THE USE OF PHOSPHORUS IN THE MANUFACTURE OF LUCIFER MATCHES.

NOW that the scientific, technical, medical, and dental aspect of the question in regard to the liabilities of those engaged in the manufacture of phosphorus matches has been clearly brought forward we may shortly expect some fresh legislation on this important subject. The names of Professor T. E. Thorpe, LL.D., F.R.S., the principal chemist of the Government Laboratory, Professor Thomas Oliver, M.D. Glasg., F.R.C.P. Lond., physician to the Royal Infirmary, Newcastle-upon-Tyne, and Dr. George Cunningham, M.A. Cantab., senior dental surgeon to the London Hospital, form a trio of authorities whose views and account of the various sections of the subject will carry very great weight and ultimately materially help in the elucidation of a problem which affects the life and well-being of those engaged in the important industry of match manufacture. The Blue Book just issued, which embodies the several reports of these experts and to which an introductory memorandum by the Chief Inspector of Factories, Dr. Whitelegge, has been added, is a valuable contribution to the subject and one which should leave little doubt as to the direction in which the manufacture of matches can be better regulated with a view to minimising the risks of injury to health of the operatives concerned.

We may deal with Professor Thorpe's report first. At the outset he points out the different properties of yellow and red phosphorus and explains that the products of the oxidisation of yellow phosphorus are phosphorous oxide and phosphoric oxide. Only the yellow phosphorus oxidises at the ordinary temperature of the atmosphere. The glow is invariably accompanied by, and is probably dependent upon, the formation of ozone. By the way, we should like to ask whether the ozone which must be produced in comparatively larger quantities in match works has any unfavourable influence on the health of the operatives. This point is not touched upon in the report, although ozone, we believe, has distinctly poisonous properties when inspired in tolerable quantity. In some recent experiments made in the Government Laboratory it was shown that the spontaneous oxidation of phosphorus could be instantly checked by allowing to evaporate about one centigramme of turpentine into 1000 cubic centimetres of air. Phosphorus placed in this atmosphere did not fume or glow nor was any oxygen absorbed. It is suggested, therefore, that the air in the match works might be impregnated with a small quantity of oil of turpentine with distinct advantages. Professor Thorpe also conducted some experiments as to the chemical effect of phosphorus fumes upon the teeth, with the result that a marked solvent action was shown to take place upon the teeth to the extent in the case of a dilute solution of phosphoric acid of a loss of 8·9 per cent. of their original weight. The amount of phosphorus fume in the air of the dipping-room was found to be equal to 0·02 milligramme per 100 litres. In the air of the boxing-rooms it was 0·12 milligramme phosphorus per 100 litres. This increase is due to the firing of the matches. The amount of phosphorus on the average removed on washing the hands was equal to 4·2 milligrammes per head per day of 10 hours. Professor Thorpe follows these experiments with a very interesting account of the match-works in the United Kingdom and the processes carried on therein, while a very exhaustive description is given also of the continental match-works and the special regulations in force in them. From the experience which he has gained in this inquiry he ventures the opinion that in the event of making any amendment of the existing special rules which may be thought desirable the examples of the regulations described in the report will supply all that is necessary upon which to base them, for it has been conclusively established, he adds, that where such rules are vigorously enforced phosphorus necrosis has almost entirely disappeared. As to a substitute for phosphorus, he concludes that a satisfactory one has not yet been found and no method of employing red phosphorus on the match head has been found to be commercially practicable in the production of a "strike anywhere" match. The evils attending the use of ordinary phosphorus can be greatly minimised by

observing certain rules in regard to the medical and dental supervision and improving the conditions of environment.

With these conclusions the report of Dr. Oliver practically agrees and he has also had the opportunity of watching the processes of match manufacture as carried out in a number of works abroad. His verdict is summed up in the following sentence: "Under the circumstances, therefore, of experience having shown that methods of manufacture exist which are capable of practically excluding phosphorus necrosis from the industry, of the 'new strike anywhere' sesqui-sulphide match of the French Government still passing through its period of probation, and inventors busy at work, it is premature to recommend the total abolition of white phosphorus in Great Britain and Ireland." Dr. Oliver then epitomises a series of recommendations to be observed in order to avoid the toxic and destructive action of phosphorus fumes upon match-workers.

Dr. Cunningham's report is a very able and exhaustive piece of work dealing chiefly with the origin of phosphorus necrosis. The chief point of his inquiries is that he finds that in the absence of special arrangements for regular dental supervision the teeth are deplorably bad, a condition fostering necrosis of the jaw. According to Mr. Morton Smale phosphorus necrosis can only originate under the following circumstances: (1) when dental caries has exposed the pulp of a tooth; (2) during the healing process after tooth extraction; and (3) during the time there is some lesion of the gum. Like the previous observers Dr. Cunningham does not consider that the yellow phosphorus match trade presents any exceptional dangers which cannot be met by proper precaution, nor does he think that any case has been made out for the prohibition of yellow phosphorus. He recommends that certain special rules affecting the trade should be strengthened. These recommendations turn on a medical and dental examination of all persons engaged in the industries, of keeping a record of this examination as well as of a systematic periodical examination, on proper provision being made for preventing persons from working whose teeth are defective, and, finally, the provision of a supply of mouth-wash for the systematic use of the work-people. Dr. Cunningham's experience of a number of "strike anywhere" matches made without white or yellow phosphorus is that their use in commerce is not as yet practicable, while accidents of some severity have already occurred to those engaged in handling them even in small quantities.

These reports occupy a Blue Book of 236 pages which is very usefully illustrated, the subjects being the various machinery employed in manufacture, the position of the operative in relation to the phosphorus compound, the means of drawing away the fumes by an air exhaust, &c., while in Dr. Cunningham's contribution some excellent diagrams are given showing the condition of caries in teeth and of the nature of the disintegrating action of necrosis following the action of phosphorus fumes on decayed teeth. Our knowledge of the subject is decidedly enriched by the labours of these gentlemen, and the Government have now an opportunity of so regulating the manufacture of lucifer matches as to place the great number of workers in this important industry under conditions entirely free from reproach; for the import of the combined labours of these able investigators on the subject is that there need be no phosphorus necrosis where due care is taken and where regulations are strictly, yet not vexatiously, enforced.

QUACKS AND ABORTION:

A CRITICAL AND ANALYTICAL INQUIRY.

VIII.[1]

DURING the past few weeks the attention of many not usually interested in such matters has been directed to a murder in a house near Tottenham-court-road owing to the fact that the woman believed to have been the victim has now been arrested abroad and is likely to be charged with the commission of the crime. It will apparently be suggested against her that the murdered woman died in consequence of an illegal operation and that she and those who performed it were brought into communication by means of an advertisement in a German newspaper published in London—the *Londoner General-Anzeiger*. We call attention to the advertisement because whatever bearing it may or may not have on the case in question, and whatever may be the degree of guilt or innocence of the woman under arrest, it is an advertisement akin to those against the unchecked publication of which we are protesting. Headed "Private Confinement," it offers, accompanied with secrecy, advice and help in women's troubles, while other similar advertisements accompany it in the columns in which it appears. Further comment at the present stage would be out of place.

[1] Articles I., II., III., IV., V., VI., and VII. were published in THE LANCET of Dec. 10th, 17th, 24th, and 31st, 1898, and Jan. 21st, Feb. 4th, and March 11th, 1899, respectively.

Privat-Entbindung.

Diskret. Rat und Hilfe in Frauenleiden erteilt Frau Briesenick, 8 Whitfield Street, Tottenham Court Road.

We give below a second list of newspapers published in Great Britain and Ireland which have during the past few weeks contained advertisements of persons who profess more or less openly to sell abortifacients, or whose goods are liable to be bought by ignorant women seeking to put an end to their pregnancy owing to their claiming to "cure all obstructions" or to "correct all irregularities, remove all obstructions, and relieve the distressing symptoms so prevalent with the sex." The names printed after those of newspapers are names of persons with whose trade we have dealt in detail in our previous articles.

LIST OF PAPERS.

Aberystwith Observer.
Ashbourne News.
Bedford Express.
Bedford Mercury.
Bideford Gazette.
Boston Independent.
Bromley Journal.
Bury Free Press.
Cassell's Saturday Journal.
Chester Chronicle.
Christian Leader.
Colchester Mercury.
Dorking Advertiser.
Dover Express.
Dundee People's Journal.
Dunoon Herald.
Epworth Weekly Herald.
Framlingham News.
Freeman's Exmouth Journal.
Horncastle News (Davis).
Ilfracombe Gazette.
Independent.
Irish Times.
Isle of Man Times.
Isle of Wight Times.
Islington Gazette.
Kent and Sussex Courier (Blanchard, Martin).
Kettering Guardian.
Kettering Leader.
Leighton Buzzard Reporter.
Lichfield Mercury (Blanchard, Ottey).
Lisburn Standard.
Liverpool Weekly Post.
London Morning.
Maidstone Journal.
Manx Sun.
Market Rasen Mail.
Middlesbrough Evening Telegraph (Ottey).
Midland Counties Advertiser.
Midland Herald.
Mirror of Life.
Monmouth Beacon (Davis).
Montgomery County Times (Blanchard.)
Montrose Review.
Moonshine.
Morecambe Times (Blanchard).
Newry Standard.
News.
Northampton Mercury.
Oundle Guardian.
Oxford Chronicle.
Paisley Gazette.
People (Davis).
Peterborough Evening News.
Portsmouth Times.
Royal Cornwall Gazette.
Salisbury Express.
Shrewsbury Chronicle.
South-Eastern Gazette.
South Wales Daily News.
Sussex Weekly News.
Swansea Journal (Blanchard).
Swindon Advertiser.
Tonbridge Standard.
Tunbridge Wells Advertiser (Heseldine).
Weekly Bradford Observer.
Western Press.
Worcester Daily Times.

At the Hackney Coroner's Court on Monday last Dr. Wynn Westcott held an inquiry respecting the death of an unfortunate woman who died from hæmorrhage consequent on abortion. Evidence was given that the deceased had attempted to obtain medicine for certain purposes from Madame Frain. The jury returned a verdict to the effect that "The deceased's death was due to syncope, the result of hæmorrhage, consequent on abortion, for which no cause has been proved, and the jurors having heard the evidence as to the manner and conduct of the business called that of 'Madame Frain' are of opinion that the business is either fraudulent or felonious." The coroner said that "Madame Frain's" business had at one time a most evil reputation, and THE LANCET had designated the advertisements issued by the firm as "disgusting." No steps had been taken by the proprietors to disprove the insinuation, so he concluded that they did not wish the truth or otherwise of THE LANCET'S statement investigated.

ARMY MEDICAL REPORT FOR 1897.[1]

SECOND NOTICE.

THE Army Medical Report for 1897 with its appendices forms a voluminous publication of some 600 pages altogether. We have already given a first notice of it in THE LANCET of March 11th, 1899, p 718. These reports are valuable in that they contain a mine of information of one kind and another likely to prove of interest to medical officers belonging to the armies of this and other countries. Apart from the health statistics, accompanied by a running commentary for their elucidation and for bringing into prominence the principal features in the medical events which they chronicle, there are numerous articles dealing with the progress of hygiene, especially army hygiene, military medicine and surgery, together with reports on the medical history of any campaigns in which this country has been engaged, papers from the delegates to different congresses, and contributions by individual officers on subjects about which they have either had any exceptional experience or in which they have taken any special interest. We propose, however, to confine our attention in the present article to such points as have occurred to us in turning over the pages of the report. Those who are desirous of going into statistics or of verifying the statements contained in the text can do so by turning to the tabular abstracts, but few people care to encounter a *chevaux de frise* of figures unless compelled to do so or without having some special object in view. We may consequently put these abstracts altogether aside as far as we are concerned and content ourselves with what we find in the remainder of the volume. The report leads off with a copy of the instructions furnished for the guidance of medical officers regarding the revised "Nomenclature of Diseases" (1896 edition) published by the Royal College of Physicians of London and adopted by the Registrar-General. It became necessary, of course, for the Army Medical Service to follow the nomenclature used in civil life in order to ensure for statistical purposes conformity in the classification of diseases and to afford one and the same basis of comparison for both. Alterations of the nomenclature of diseases are obviously necessary from time to time but the result is occasionally somewhat embarrassing to non-medical readers, such as members of the House of Commons who sometimes turn to these reports for evidence for or against the Contagious Diseases Act, for example. *Apropos* of this we may say that in the summary remarks on the health of the troops at home and abroad on page 2 of the report it is stated that the decline in venereal diseases amongst the troops at home which commenced in 1886 and which has practically continued without interruption ever since is again observed in 1897, the greatest decrease being in primary venereal sores. A very marked variation has been noted, however, in the prevalence of these diseases at individual stations. We have always held that one of the principal results of the operation of the Contagious Diseases Acts was the moral and social improvement noticeable in those towns and garrisons where they were in operation. There is no doubt that they exercised a restraining influence on the lax and immodest conduct of many thoughtless girls through fear of their behaviour attracting the notice of the police. It is to be feared that it does not at all follow that the number of cases of this class of disease in any given locality is any reliable measure or indication of its sexual morality. Be this as it may, however, we find that taking all forms of venereal diseases together the admissions in the United Kingdom numbered 13,490 and the constantly sick 1205·31. The total ratio of admissions for these diseases was 139·7 and that of constantly sick 12·48 per 1000; these ratios being lower than those of the preceding year and lower also than the average of the preceding 10 years.

The districts showing the greatest prevalence of venereal diseases were the Dublin, Western, Belfast, and Woolwich. The lowest rates were in the Cork, Scottish, South-Eastern, and North-Western districts. Compared with the distribution of venereal disease in the previous year increase is observed in the admission rates of the Belfast, Channel Islands, and Woolwich districts, but in all the others decrease has occurred, the most marked being in the Western district, in the North-Eastern, in Aldershot, and in the Scottish district. There is no need to advert to the prevalence of diseases of this nature among European troops in India for it is already a matter of common knowledge and serious concern. Turning, however, to the troops serving in China we can form some estimate of the scourge which this class of disease may become. Including all forms, the total admission rate in 1897 amounted to 668·4 per 1000, being a marked increase on that of the previous year and as much as 313·7 higher than the average ratio for the preceding 10 years. The Principal Medical Officer remarks that the statistics of the past two years indicate a persistent and rapid increase both in the number of cases and in the rate of constant inefficiency from these causes, which, if it continues, will probably necessitate a permanent increase in the hospital establishment at Hong-Kong. The contrast between the admission rate for these diseases at Gibraltar and Malta is also noteworthy, 282·7 at the former as against 166·3 per 1000 at the latter station.

As regards the health statistics of the different arms of the service serving in the United Kingdom we find that in 1897 the highest rate of admission was in the Infantry, the next in the Cavalry, and the lowest in the Royal Engineers, the next lowest being in the garrison staff and departments. The highest mortality rate occurred in the Foot Guards, 4·20 per 1000, the next being 4·19 per 1000 in the regimental depôts. In the previous year the highest rate was in the regimental depôts and the next highest in the Royal Artillery. The lowest death-rates in the year under review occurred in the Household Cavalry with 2·54 per 1000, and in the Infantry with 2·78 per 1000. Invaliding was highest in the Infantry, next in the Foot Guards, while the lowest rates occurred in the Royal Engineers. The highest rate of constant inefficiency from sickness was in the Foot Guards with 63·03 per 1000, followed by the Infantry with 44·79 per 1000. The lowest rate, 17·75 per 1000, was in the Royal Engineers, the next lowest being in the garrison staff and departments. The same arms, in similar order, furnished the highest and lowest rates in the preceding year.

The total number of invalids admitted into Netley Hospital from abroad during the year 1897 was 2638, of whom 23 died, 962 were discharged to duty, and 1429 were invalided from the service. It may be here remarked that the Hermite system of sewage disinfection which was installed at this institution some years ago is reported to be working satisfactorily.

A good deal of attention has of late been directed to the provision of accommodation for sick and convalescent soldiers, and we regard this measure as a very important step in the right direction on the part of the present Government. It amounts to a scandal that the nation should not take all reasonable means of aiding soldiers who have been disabled or who have lost their health in its service, and an obvious way of attempting of doing this is by utilising any available accommodation at such stations as afford climatic and other advantages for the establishment of sanatoria or convalescent depôts. A beginning, although on a very small scale, has already been made in this direction. Scarborough and Tynemouth were used for the purpose in 1897. Two classes of convalescents are transferred to these depôts—namely, men who require no hospital treatment but who have not regained strength sufficiently to return to duty and men who require change of air in aid of hospital treatment. For the former barrack-room accommodation is provided. 24 of the latter class were transferred—viz., 22 to Scarborough and 2 to Tynemouth. The Principal Medical Officer remarks that almost all the patients have derived great benefit and the expense has been small.

This system is capable of being largely developed and, we make no doubt, with distinct advantage not only in the way of humanity to the sick and disabled soldier but with benefit to the State in the restoration of many men whose services are now lost to the army by their being permanently invalided—to swell the sick and death-rates as well as to increase the poor-rates of the civil population. At Fleetwood there should be available accommodation. The health of the troops is very good there, and the medical officer in charge regards it as one of the healthiest stations in England and suitable for the transfer of cases from other

[1] Army Medical Department Report for the Year 1897, with Appendix. Vol. xxxix. London: Printed for H.M.'s Stationary Office by Harrison and Sons, St. Martin's-lane. 1898. Price 2s. 11d.

stations requiring change of air. In the Isle of Wight also—at Golden Hill Fort, for example, when a new hospital is built—there should be excellent positions for accommodating suitable cases requiring change of air and certain climatic conditions for their recovery from attacks of serious or acute diseases and pulmonary complaints. Many other stations will also offer advantages for the establishment of army sanatoria, and some of them should be on inland sites for seaside resorts do not suit all patients returning from foreign service.

THE ROYAL COMMISSION ON THE METROPOLITAN WATER-SUPPLY.

THE fifty-eighth sitting of the Royal Commissioners was held at the Guildhall, Westminster, on Tuesday, March 7th. The Commissioners present were Lord Llandaff, the Right Honourable John Mellor, Sir John Dorington, Mr. de Bock Porter, Mr. Robert Lewis, and Major-General Scott. The witnesses examined were Mr. William Whitaker, F.R.S., formerly senior officer of the English staff in the Geological Survey; Mr. Richard Hack, engineer to the Chelsea Company; Mr. Ernest Collins, one of the engineers to the New River Company; and Mr. George Corble, clerk to the Lee Conservancy Board.

Mr. WHITAKER, in answer to the CHAIRMAN, said that he had given evidence as a witness before Lord Balfour's Commission, partly at the request of the Commissioners and partly on behalf of the London County Council. He had given great attention to the water-bearing strata of Kent and he was of opinion that there was an abundant supply of water there. A great part of the district had a very sparse population. With regard to the amount of rainfall which percolated the witness said that the calculation showed that the annual percolation was 40,000 gallons of water daily to the square mile. As a basis of the calculation of the amount of water which the area produced the witness had taken about half the amount of rainfall as the percolation unit. He had prepared figures in such a way as to show what the available amount of water was supposing that one-third of it percolated, in case half of it percolated, and in case one-eighth percolated.

In answer to Mr. MELLOR the witness said that the amount which percolated depended on whether the rainfalls were on low or on high ground. On high ground it took longer to percolate than on low ground, and in answer to Major-General SCOTT the witness admitted that it was impossible to say what amount of water did actually percolate.

In answer to the CHAIRMAN the witness said that he thought that roughly it might be assumed that one-third of the rainfall percolated. Occasionally a rainfall of three inches might send two inches into the ground and another rainfall of three inches might hardly send any for the water evaporated or got soaked up by the vegetation. The amount which percolated depended greatly on the period of the year at which the rainfall took place; for instance, in the summer the amount of percolation was small.

The CHAIRMAN said that Lord Balfour's Commission assumed that an annual percolation of seven inches was a proper average to take. The witness said that his impression was that seven inches was an under-estimate. He thought the amount was not less than eight inches. If the amount of percolation was seven inches a year the total annual amount would be 34,500,000 gallons on a daily average, and if the percolation were eight inches it would amount on a daily average to 39,000,000 gallons throughout the year.

Major-General SCOTT pointed out that that amount of water would only be available if it could be pumped up from wells or given off by springs after it had percolated. The witness admitted that a fair allowance would have to be made for the water which it was not possible to obtain, but that amount depended very much upon what works were undertaken to get it.

Major-General SCOTT suggested that even if a tunnel a mile or two long were made it would not necessarily follow that all the water would be intercepted. The witness thought that very little water would pass over the tunnel.

Major-General SCOTT pointed out that it might pass under it, and the witness said that that would depend on the depth of the tunnel, and if it were driven parallel with the Thames on the sea level the water on its way to the Thames would be intercepted.

In answer to the CHAIRMAN the witness said that he thought that 9,000,000 gallons of water a day could be obtained from the greensand in the area of the Kent Company and that it would be possible to obtain from the chalk from 43,000,000 to 59,000,000 gallons daily.

With regard to the present supply from wells in the Kent Company's district the witness said that he was told that 9,000,000 gallons were obtained daily at Deptford, and that in the Ravensbourne area 2,000,000 gallons were obtained at Shortlands. With regard to the part of Kent outside the area of the Kent Company the witness thought that 150,000,000 gallons a day could be obtained, and this amount and the 60,000,000 gallons which could be obtained in the area made a total of 210,000,000 gallons.

In answer to Mr. MELLOR the witness admitted that it would not be possible to get the whole of this water, but he thought that it would be possible to get a good deal of it. He admitted, however, that underground water was such a very doubtful subject that it was impossible to speak with certainty on the matter. At present, however, only half the 60,000,000 gallons which he estimated as a possible amount are obtained in the area of the Kent Company.

Mr. RICHARD HACK, in answer to Major-General SCOTT, said that the Chelsea Company were increasing the capacity of their reservoirs at Molesey. The work now being carried on is that the banks of the existing reservoirs are being raised so that their capacity will be increased to 50,000,000 gallons. This will be sufficient for a 14 days' supply. The depth of the reservoirs will be 23 ft. One of the reservoirs was cleaned three years ago. It was the custom of the company to clean each reservoir periodically once every eight years. The amount of deposit which was found was one inch of dry sediment. The lowest four feet of the reservoir contained water which would quickly block a filter bed if it were put on it. The bottom water contained a large amount of solid matter in suspension and if this were used the filters would have to be cleaned much more often than they are at present. The solid matter would be deposited on the surface of the filters and it would not be economical to use such water. The Chelsea Company were in the habit of closing their intake from the Thames in time of flood. They did this because flood water contained a large amount of matter in suspension and this had to be deposited. Moreover, flood water was discoloured, so that it was impossible to get rid of all the colour by filtration. The witness said that for these reasons it was better to avoid taking flood water altogether. He did not think that the inferiority of flood water was entirely overcome by means of filtration. If it were used it would be necessary to have larger reservoirs or a larger filtration area.

In answer to Mr. DE BOCK PORTER the witness said that he did not think it was necessary that reservoirs should be cleaned once in eight years. It was the practice of the Chelsea Company to clean them so frequently because they had to deal with a large quantity of deposit. They obtained something like 1000 cubic yards of deposit from an area of eight acres.

In answer to Mr. MELLOR the witness explained that the bottoms of the reservoirs were not paved but consisted of ballast gravel and that the reservoirs were made watertight by puddle walls which passed down to the London clay.

In answer to the CHAIRMAN the witness said that it was not necessary that the bottom of the reservoirs should be puddled because the water could not pass through the layer of clay and the bottom of the reservoir was 12 ft. above it, so that there were 12 ft. of gravel into which the water in the reservoir could sink.

In answer to Mr. MELLOR the witness said that it was not necessary that this gravel should be washed.

The CHAIRMAN pointed out that the allowance of four feet for bottom water was nearly one-fifth and it did not agree with the figures which had been given by Mr. Middleton.

In answer to Major-General SCOTT the witness said that they occasionally took water which was turbid into their reservoirs, but they never did so when they could avoid it. They preferred when possible not to take flood water for nine days after a flood, sometimes they were obliged to take it more quickly, but the shortest period at which he remembered having taken water was four or five days after flood.

In answer to Major-General SCOTT the witness gave a description of the construction of the filter-beds used by the

company (this information has already been given in THE LANCET of March 6th, 1897).

In answer to Mr. DE BOCK PORTER the witness said that the usual duration of the life of a filter until it was cleaned was nine weeks; at the end of that time the sand had to be washed.[1] The longest time which the witness had known a filter to last without clogging was 16 weeks and the shortest period was five or six weeks. He had never found it necessary to clean one more frequently than once in five weeks.

In answer to Major-General SCOTT the witness said that the maximum amount of water which they could pass through their filters collectively was about 14,000,000 gallons; if more water were wanted they would equalise the work by drawing from the Putney reservoirs. (The reservoirs at Putney are capable of storing 11,000,000 gallons.) The slowest rate of filtration which they allowed to occur before disusing a filter was about one a half gallons per square foot per hour. He did not know of a case in which they had been obliged to exceed the rate of two and a half gallons per square foot per hour. He did not think that regulations with regard to filtration which had been recommended by Lord Balfour's Commission were necessary in the case of the Chelsea Company. At the present time each filter-bed was not supplied with a separate well but one was to be provided as soon as it could be made. The witness did not think that there would be any advantage in having an automatic arrangement to record the rate of filtration but would rather depend on the method which he adopted of using standard gauges on the sand; he had less confidence in an apparatus but he had never seen one at work. He thought that an automatic record would be a good thing if it were reliable but for his own part he preferred the method which was at present in use, that of personal supervision.

In answer to Major-General SCOTT the witness said that they were placing sea sand on their filters at the present time and that this change had probably been adopted on the recommendation of Sir Edward Frankland.

Mr. ERNEST COLLINS, in answer to the CHAIRMAN, said that he had prepared some tables showing the saving which had taken place in the amount of water distributed by the New River Company since they had used Deacon's waste meter system and had visited the houses of their customers to see in which the loss of water was taking place. The public had very generally accepted and adopted the use of the fittings which the company had previously examined at their testing office[2] and which they stamped. In the case of new houses stamped fittings were used in 95 per cent. of the cases and in most of the other cases the apparatus used was now good. The fittings which they examined were tested and the witness attributed most of the success which they had had in suppressing waste to the use of properly tested fittings of good manufacture and in his opinion water consumers should be compelled to use such fittings.

The tables which the witness put in showed the rate of supply per head in the district of Shoreditch, comparing the consumption in 1882 previously to the introduction of the waste meter system with the consumption after its introduction in 1893-4 and up to the year 1898. The amount supplied daily per head had been reduced from 35·8 gallons to 15 gallons.

The CHAIRMAN asked the witness how he separated consumption of water from waste of water, and the witness explained that as a rule water was not used between the hours of 12 midnight and five in the morning, and that water which passed through their mains at that time was, as a rule, wasted by the customer through defects in the fittings.

The CHAIRMAN remarked that it seemed from the evidence of the witness that there must be an enormous amount of water wasted in the districts of some of the metropolitan water companies.

Major-General SCOTT pointed out that the average daily consumption per head in the district of the Grand Junction Company is 48 gallons and the chairman remarked that it was 42 gallons in the case of the Southwark and Vauxhall Company.

An interesting table was put in showing the supply per head per day in the Tudor-street district of the city where the supply was for printers and for other traders and utilised by day and by night by a shifting population. In this district the population is 1082, the average daily consumption per head is 59·4 gallons, of this consumption 32·8 gallons are used during the day and 26·6 are "wasted" (used) during the night.

In answer to the CHAIRMAN the witness pointed out that in parts of their district an enormous quantity of water was "wasted" by watering gardens. Some customers allowed their hoses to run in the gardens all night. The company suffered most terribly in the summer time from those sprinklers which are put out in gardens to water lawns.

Major-General SCOTT said these were easily visible objects and suggested that their inspectors might object to their use.

The CHAIRMAN thought that if the customers paid for their water they might think they were entitled to use as much as they liked. The witness said that he was afraid that that was the case. The company endeavoured to check the "waste" (use) of water as much as possible and they remonstrated with the people.

Mr. GEORGE CORBLE, on behalf of the Lee Conservancy Board, gave evidence as to the pecuniary resources of, and the methods adopted by, the Board of which he is clerk.

The fifty-ninth sitting of the Royal Commissioners was held at the Guildhall, Westminster, on Monday, March 13th. The Commissioners present were Lord Llandaff (the Chairman), Sir John Dorington, Sir George Bruce, Mr. de Bock Porter, Mr. Cripps, Mr. Robert Lewis, and Major-General Scott. The witnesses examined were Mr. John Hollams, Mr. Urban Armstrong Smith (surveyor and engineering adviser of the Hertfordshire County Council), and Mr. Baldwin Latham, civil engineer, who gave evidence on behalf of the Hertfordshire County Council.

At the commencement of the sitting Mr. BALFOUR BROWNE, Q.C., on behalf of the London County Council, made a statement as to the policy which that body proposed to adopt. This statement was made in answer to a request from the CHAIRMAN who said at one of the earlier sittings that the Commissioners wished to know whether the London County Council desired that the Commissioners should advise that purchase of the water companies' undertakings was expedient on any terms of arbitration, or whether they wished them to find that purchase would be expedient only upon special terms of arbitration. Mr. Balfour Browne explained that his clients had reduced to writing the answer which they desired to make and he read a written statement in order that he should not himself put in a word that he was not authorised to state. The statement is as follows:—

We would point out that the doubt which still seems to be entertained by some members of the Commission is no doubt due to the fact that throughout the present inquiry the object of the committee has been, not so much to make one particular case which they ask the Commission to accept as to lay before the Commission all the information relating to the water-supply of the metropolis which several years of experience have enabled them to collect and upon which the Council's policy has been based. In order to enable the Commission to appreciate this policy the committee have laid before them the decisions arrived at by the Council and the specific schemes for the solution of the water question which the Council has presented to Parliament. The Council's Bill for the purchase of the eight companies is now before Parliament, and it contains a special arbitration clause which is the clause which was discussed before Mr. Plunket's Committee in 1895, and this clause affords in itself the answer to the Chairman's question—namely, that in the opinion of the Council it is expedient to purchase the companies upon special terms of arbitration. With regard to the question whether the Council thinks that purchase is expedient upon any terms of arbitration we would point out with the greatest respect that as the Council's definite proposal is now before Parliament and the Council's witnesses may at some time be called upon to substantiate it before a Committee of the House of Commons it is impossible for the committee to say anything that might be construed so as to commit the Council to accept any terms of arbitration that might be imposed upon it. At the same time the committee wish it to be stated that in their opinion it does not necessarily follow that the precise clause contained in the present Bill affords the only means of obtaining fair terms of arbitration. The Council's view has been that the position of the metropolitan water companies differs in many respects from that of similar undertakings with which Parliament has hitherto dealt, and its contention is that the fair value of the companies' undertakings should be ascertained by a court of arbitration of the highest standing with the fullest powers to inquire into all the circumstances of each individual case.

Mr. CRIPPS remarked that there was a reference to a Bill which had been brought in by the London County Council and of course the terms of this Bill were known to the metropolitan water companies. A question which seemed important was whether it was usual in private Bills to

[1] In the case of some of the other companies the filter beds are cleaned as a rule about once in five or six weeks. These companies take in flood water from the Thames.

[2] See the account of the workshop of the New River Company as given in THE LANCET of Dec. 4th, 1897.

introduce a long preamble reciting the whole case as to the charges which the promoters made against other parties. He noticed that the preamble of the Bill extended to three or four pages and that it recited charges that were made against the metropolitan water companies in former times and he asked whether this was a usual course to adopt.

Mr. BALFOUR BROWNE replied that they would of course have to prove the preamble of their Bill and that the practice with regard to the introduction of a long preamble differed very much in different cases but that as late as last year there was a long preamble in the case of the Tilbury Bill, for which Mr. Littler, Q.C., appeared as counsel.

Mr. JOHN HOLLAMS, on behalf of some of the metropolitan water companies, gave evidence with regard to a report on the London Water-supply of the Parliamentary Committee appointed in the year 1821, and with regard to a Government Bill which was introduced into Parliament in the year 1851. By this Bill it was proposed to amalgamate the companies, to constitute a board of directors consisting of 12 persons who were to be remunerated, and the compensation was to be settled by arbitration under the Lands Clauses Act. The witness said that he gathered also from the proceedings that the companies were then paying about 6 per cent. on their capital. The arrangements proposed by the Bill were that a new water stock should be created to bear interest at 5 per cent., and that the existing rates were to be continued until there was a surplus and then the rates were to be equalised in the respective districts, then if there was again a surplus the stock was to bear interest at 6 per cent. and after paying 6 per cent. all the profits were to go to the consumers. The Bill contained a schedule to specify the rents which were to be charged, but this schedule was never filled up. The Bill was brought in under Lord John Russell's administration and a committee was appointed to make a report upon it. After a great deal of evidence had been taken by the Parliamentary Committee on August 5th, 1851, Sir James Graham, chairman of the Committee, made in Parliament an explanation of his position and moved that the evidence which had been taken before the Committee on the Metropolitan Water Bill should be printed. He said that after an inquiry which had lasted between 30 and 40 days the House would probably expect that he should state how matters stood. The Committee had investigated the case on the part of the promoters of the Bill. That part of the evidence was complete. They had proceeded to take the evidence of those who contended for the advantages of establishing a control of the undertakings by some municipal body elected by the people. That part of the evidence was also complete. The evidence of the existing water companies had been given at considerable length but it was not finished. The Committee advised that the evidence should be printed with a view of affording information to the public. The Committee did not feel that they were in a position to give any opinion upon the evidence, and he therefore moved that it should simply be printed as it stood. In the following February Lord Seymour introduced a Bill into Parliament and this Bill was based on entirely different lines from those of the preceding one. In introducing the Bill Lord Seymour said that it would be best for the companies to act either separately or in conjunction as they might choose. If municipal bodies, inexperienced as they were, were to be suddenly called together (divided, as doubtless would be the case, by party feeling) to supply water for the necessities of the town great delay would unquestionably arise. Lord John Russell's Government went out of office in 1852 and Lord Derby's first administration was formed. Lord John Manners (who succeeded Lord Seymour in office) on March 25th, 1852, moved that it should be an instruction to the committee of selection that they have power to fix the committee on the Metropolitan Water Bill for April 1st. He said that he did not pledge himself to support the measure introduced by his predecessor in office because in one important item, that relating to the scale of charges, the Government of which he was a member dissented altogether from the previous one. In the meantime the companies had introduced Bills which resulted in their Acts of 1852 and the Government Bill went before a Special Committee. The Committee decided not to hear evidence on the preamble and Mr. Mellor, the counsel for the Government, proceeded to deal with the clauses. Amongst other things Mr. Mellor contended that if a house were within the area of more than one water company he apprehended that the householder had a right to be supplied from which source he pleased. Ultimately a Bill was promoted which became the Metropolis Water Act of 1852.

Mr. URBAN ARMSTRONG SMITH, in answer to the Chairman, said that he had investigated on behalf of the Hertfordshire County Council the water levels in the chalk of that county and the factors which govern the rise and fall of the springs and streams. The CHAIRMAN at once informed the witness that the Commissioners had decided that they would not reopen those questions which were decided by the Balfour Commission, but they would hear the witness on any new fact which had occurred since the sitting of the Balfour Commission which would throw new light upon the subjects into which they had to inquire. The witness said that he considered it a matter of importance that the New River Company had shown consciousness that their supplies from the Lee were deficient because they had joined in the Staines Reservoirs Scheme. The drought in the year 1898 had thrown light on the subject of the diminution of the supply of water in Hertfordshire in a number of ways: the rivers have been lower than at any previous period, the wells had been very much lowered, and they had the great fact before them that Chadwell Spring which had never been known to be dry before had failed last autumn. In addition to these facts the rise in the River Lee was less than it had ever been before and the wells in the Lee valley were lower.

The CHAIRMAN remarked that the witness had prepared a large number of tables relating to the Chadwell Spring and asked from what source the figures were obtained. The witness replied that some of them had been given by Mr. Francis, the engineer of the New River Company through their representative, Mr. Hollams. One of the tables which was put in showed the average daily flow of Chadwell Spring in three-year periods from 1875 to 1898; another table showed the average daily flow in four-year periods; a third table showed the average daily flow in five-year periods; a fourth table showed the average daily flow in six-year periods; a fifth showed the average daily flow in seven-year periods, and a sixth table showed the average daily flow in eight-year periods. The table showing the flow of Chadwell Spring in three-year periods showed a decline of 43 per cent. between the averages of the three years 1875–77 and the three years 1896–98. During the second of those two periods the reduction in the rainfall was less than 16 per cent.

Mr. POPE, Q.C., said that some of the figures had previously been given to Lord Balfour's Commission and suggested that the witness "had manipulated the tables afresh."

Lord ROBERT CECIL replied that they had expressly avoided manipulating the figures: they restated the figures in another form in order to avoid the charge that they had manipulated them in any way and the tables showed that whatever way the thing was taken the result was the same—that is to say that there had been a steady decrease in the flow from Chadwell spring. (The figures were of very great interest but as they occupy many pages it is impossible that they can be reproduced in THE LANCET and it must suffice to state that they can by no ingenuity be made to bear any other interpretation than that given to them by Lord Robert Cecil.)

With regard to the entire failure of the spring in the autumn of 1898 Mr. PEMBER, Q.C., pointed out that Mr. Francis had already explained that it was due to a "crack in the basin" and it was suggested that the company had pumped out the water in order to mend the crack. Major-General SCOTT, however, pointed out that if the basin had no aperture it would be impossible for any water to get into it.

The witness said that the well at Haileybury College had been greatly affected by the pumping at the station at Rye Common. According to the evidence of the bursar of the college the pump at Rye Common was not worked on Sundays and on that day there was a rise of water in the well of the college. During the autumn of 1898 the New River Company pumped water from the site of the Chadwell Spring and this pumping lowered the water in the wells in the neighbourhood. On this matter many details were given and plans were shown giving the level of the water in the wells at different dates. The witness said that Hertford is supplied by a well which is from 70 feet to 100 feet in depth, but the amount pumped from it was only 200,000 or 300,000 gallons daily and this

amount was not enough to have any effect in lowerng the wells in the neighbourhood.

Mr. BALDWIN LATHAM gave evidence with regard to the flow of the River Lee and as to the amount of storage capacity which the East London Waterworks Company ought to have.

THE PREVENTION OF TUBERCULOSIS.

(Continued from page 790.)

EDINBURGH.

A CONFERENCE was held on Feb. 9th within the Edinburgh City Chambers, between the sub-committee of the Public Health Committee on the Prevention of Consumption, representing the town council, and representatives of the Medical Faculty of the University of Edinburgh, the Royal Colleges of Physicians and Surgeons of Edinburgh, the Edinburgh Veterinary College, and the New Veterinary College, Edinburgh.

An apology for absence owing to indisposition was read from Sir William Turner. Bailie JAMES POLLARD, convener of the Public Health Committee, occupied the chair.

The CHAIRMAN in the course of a speech of some length thanked the representative gentlemen present for having responded to the invitation to give them the benefit of their counsel on the important question of how to deal with phthisis. The members of the special committee of the town council had before them a considerable amount of information on the subject but they desired a great deal more. The first step which they had taken had been to obtain a report from Sir Henry Littlejohn as regards the condition of Edinburgh in respect to the disease. In Edinburgh the annual death-rate from phthisis was one in 10 of the whole deaths, so that Edinburgh was rather better off in this respect than other communities. He was not aware that any municipality in the country had formally sought such a conference as they had asked on that day and they counted themselves fortunate above most other municipalities that they had a medical school of such a high standing on which they could rely for the wisest advice in this cause.

Dr. JAMES ANDREW, President of the Royal College of Physicians of Edinburgh, then spoke. He thanked the convener of the Public Health Committee for thus recognising the position of the Royal Colleges of Physicians and Surgeons of Edinburgh as high medical authorities. The committee had indicated its desire for information on five points: (1) the preventability of phthisis; (2) its curability; (3) the question of sanatoria; (4) liability to the disease; and (5) the question of notification. He had therefore obtained the consent of Sir Thomas Grainger Stewart, Dr. Muirhead, Dr. Affleck, Professor Greenfield, and Dr. Philip to speak on these five subjects respectively.

Sir THOMAS GRAINGER STEWART, a representative of the University of Edinburgh, then discussed the question of the preventability of phthisis. He recommended strongly the diffusing of information as suggested by Sir Henry Littlejohn. He thought sheets should be distributed through the city mounted on strong cardboard so that they might be hung up in the houses of the people. He spoke of the hygienic improvements for which the city had long been famous. He remembered when the city first awoke to the necessity of such measures. At a dinner of the Royal College of Physicians Mr. William Chambers, the then Lord Provost, announced that his ambition was to reduce the mortality of every district of Edinburgh to 13 per 1000. Sir James Simpson said: "Well, if you succeed in doing that I shall move that you be made an honorary member of the Royal College of Physicians." He cordially supported Sir Henry Littlejohn's observation with regard to insisting on the removal of dust from stairs, houses, workshops, and schools and the proper ventilation of these. The question of tuberculous meat and milk had also to be attended to and attractive sanatoria should be established. It was desirable, too, that the community should have power to deal by removal or otherwise with patients in the later stages of the disease. As regards the question of notification he thought that they could hardly as yet propose it as a regular compulsory measure. Much information might be acquired by the authorities without the enactment of any new law about notification.

Professor JOHN CHIENE, speaking on behalf of the Royal College of Surgeons of Edinburgh assured the town council of the readiness of that body to do all in their power to help forward the health interest of the community. Expressing his personal feeling on one or two points he stated that he believed that any attempt at compulsory notification would be in advance of public opinion. He thought that it would tend to foster concealment of the disease.

Dr. CLAUD MUIRHEAD thought that though much might be done to cure some cases yet the disease would always be with them.

Dr. AFFLECK regarded sanatoria as a treatment as yet only on trial.

Professor GREENFIELD, speaking on the subject of liability to pulmonary consumption, pointed out how frequently it happened that tuberculous disease was latent and unsuspected and that therefore it was not only the prevention of the spread of infection that had to be considered, but the prevention of those conditions which excite and cause the spread of tubercle in the body. The liability to phthisis was diminished by favourable conditions of general sanitation, good drainage, abundant air-space, ventilation, sunlight, and absence of dust. The questions of drainage and dryness of the soil were well attended to in Edinburgh. As regarded air-space he asked whether the city could not ensure that in the building of tenements there should be sufficient air-space between them as well as the entrance of sunlight. He agreed with Sir Henry Littlejohn as to the ventilating and cleansing of common stairs. Another point of importance in regard to tenements was the plan of their internal construction. He thought that the health authorities should call the attention of builders to the necessity of the possibility of thorough ventilation in these tenements, so that they might endeavour to arrive at some mode of construction which would ensure this. Professor Greenfield then went on to refer to dust as a condition which favoured the increase of consumption. All the diseases of the lungs produced by dust were, except in the case of coal-dust, usually complicated with tuberculosis. He thought that the attention of the Cleansing Committee might be called to this. Quantities of refuse from houses and closets were deposited on the street and distributed by the wind whilst awaiting removal by carts. He then spoke of the class of cases where there was an increased susceptibility to infection. Children were without doubt more susceptible to tuberculosis, especially if they had suffered recently from certain zymotic diseases, notably measles. There were schools in the city, not board schools, to which the attention of the local authorities ought to be drawn. In the same way the condition of workshops demanded attention.

Dr. R. W. PHILIP, speaking on the question of notification, said that he believed notification to be the only logical solution of the tuberculosis problem, but that he did not believe that either medical or public opinion was sufficiently formed to admit of their pressing compulsory notification at the present time. Was there, then, any other system which would approximate to the same end? Any movement against tuberculosis must be well organised—that was to say, a central bureau ought to be established under the medical officer of health which should receive and afford information on all matters relating to tuberculosis, which should furnish advice and treatment to phthisical patients, and to which such patients from other dispensaries should be directed. Such an institution should also have means of providing for medical attendance on, and even the nursing of, bedridden patients in their own homes when hospital accommodation was not available, as well as power to arrange for the examination of all suspected expectoration sent for the purpose. The institution should also be informed by the city registrar of deaths occurring from pulmonary tuberculosis within the city boundaries.

Mr. Councillor MENZIES asked whether the members of the medical profession present would advise them as a public authority where they should start with their remedial measures—whether at the advanced stage of the disease when the patients were helpless or at the first stage when the disease was curable. The greatest difficulty was in the consideration of the intermediate stage when patients were ill and yet were able to work.

Dr. WYLLIE, in reply, said that it seemed to him that it would be most reasonable to begin by dealing with the most advanced cases. The cases for hospital would have, however, to be carefully selected from the very advanced ones, otherwise, as had been pointed out, the hospitals would be

speedily filled up with patients who lingered on for a long time.

The CHAIRMAN asked whether, in Dr. Wyllie's judgment, it was their duty to do this.

Dr. WYLLIE said that he thought it was the duty of the Council to remove such cases if it could be effected and he thought that it could be effected.

Dr. WYLLIE'S answer was concurred in by the other gentlemen present.

After remarks by Mr. Councillor WATERSTON and Mr. Councillor BROWN the representatives of the two veterinary colleges spoke shortly. After a few closing remarks the proceedings terminated.

HEALTH LECTURES FOR THE PEOPLE.

The Edinburgh Health Society have issued as No. 8 of their Health Lectures for the People a plainly written pamphlet by Dr. Thomas Caverhill, medical officer of health of the county of Haddington, entitled "The Crusade against Consumption." It gives plain directions for the avoidance of infection and an account of sanatorium treatment.

SOUTH SHIELDS.

On March 13th a meeting was held in the Victoria Hall, South Shields, for the purpose of starting a local branch of the Society for the Prevention and Cure of Consumption in the County of Durham. We have already referred to the inception of this society in THE LANCET of Sept. 17th, 1898. At the present meeting the Mayor (Alderman T. D. Marshall) was in the chair, and among those present were Dr. T. F. Caverhill (to whose little pamphlet upon consumption we have referred above), Dr. W. H. Turnbull (medical officer of health of South Shields), together with many prominent laymen.

The MAYOR pointed out the necessity for the movement and Dr. W. ROBINSON together with Dr. H. SCURFIELD of Sunderland delivered addresses on the objects sought for.—Dr. CAVERHILL read a paper, illustrated by lantern slides, upon various sanatoria.—A motion, proposed by the Rev. J. T. BROWN, deciding to form a branch for the district of South Shields was passed.

LEEDS.

On March 10th a large meeting was held at the Yorkshire College, Leeds, organised by the West Riding Sanitary Committee who were instructed by the county council. The occasion was the delivery of an address by Professor Sims Woodhead upon Tuberculosis and its Prevention. Alderman Henry Sugden of Brighouse presided and nearly every sanitary authority in the West Riding was represented. There were also present a large number of medical men, veterinary surgeons, and agriculturists. The chairman in his introductory remarks spoke upon the importance of the matter and pointed out how much farmers and agriculturists could do by working together with medical men for the prevention of the scourge.

Professor SIMS WOODHEAD then delivered his address. He began by describing what tuberculosis is, mentioned how milch cows were the most frequently affected of any animal, and how very often the udder was attacked with the consequence of the milk being infected. After briefly sketching Koch's discovery of the tubercle bacillus he showed how infected milk or meat could be rendered safe by heating. They must remember that tuberculosis was not hereditary in the common sense in which that word was generally used. The bacillus was the cause of tuberculosis and the hereditary part of tuberculosis was the weakness of constitution and tissues which rendered bodies a fit soil for the growth of those bacilli. After referring to the meat and milk question, the tuberculin test and the subject of compensation, Professor Woodhead went on to speak of preventive measures, such as precautions against the dissemination of tuberculous dust by means of dried sputum and the necessity for fresh air and sunshine. Notification of disease amongst cattle was very important.

The following resolution was proposed by Mr. LIPSCOMBE who in introducing it said that some compensation, if not absolutely full, was a necessity. Landlords also should furnish their tenants with proper cowsheds.

The resolution ran thus:—

That this meeting of sanitary authorities, agriculturists, and veterinary surgeons thanks the county council for arranging this lecture by Dr. Sims Woodhead and desires that the county council will, in conjunction with the county boroughs and other sanitary authorities in the West Riding, take steps for promoting uniform legislation for the prevention of the sale or distribution for human consumption of tuberculous food and especially for the establishment of the systematic inspection of the dairies, cowsheds, and slaughter-houses.

PORTSMOUTH.

Dr. A. Mearns Fraser, the medical officer of health of Portsmouth, has issued a report to the drainage and sanitary committee of that town on the question of tuberculosis. He refers to the interest which has been awakened on the matter by the strenuous efforts of the medical profession and points out that it seems that the time has arrived for the inauguration by the sanitary authorities of active measures to diminish the heavy death-rate from tuberculosis. He considers the subject under the heads of prevention, mortality, and causation. Under the first heading he desires the securing of the coöperation of the public; the enforcement of the powers which the sanitary authority already possesses; and the taking of measures to obtain still further powers from Parliament to the same end. The public are to be instructed by means of leaflets written in plain language. With regard to sanitary matters meat and milk are to be dealt with under existing powers and further power is to be sought to deal with "back-to-back" houses and other insanitary property. He does not think that compulsory notification is desirable.

THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AN ordinary meeting of the Council was held on March 16th, the President, Sir WILLIAM MAC CORMAC, Bart., K.C.V.O., being in the chair. A report was read from the Laboratories' Committee. It contained the following particulars:—

1. *The work on diphtheria for the Metropolitan Asylums Board.*—Preparation of antitoxin.—Since December 9th last 2061 doses of antitoxin each containing 2000 units, and 5314 doses each containing 4000 units, for the treatment of diphtheria in the hospitals of the Metropolitan Asylums Board, have been supplied and all the demands fully met. During this period 25,378,000 units, or 278,329 units per diem, have been supplied. During the same period 26 doses of 4000 units each have been supplied to medical officers of health according to instructions received from the Metropolitan Asylums Board.

2. *The grant from the Goldsmiths' Company.*—Under this grant 618 doses of antitoxin, containing 1,536,000 units, have been supplied to the general and children's hospitals in London. The committee have the pleasure to report that the Worshipful Company of Goldsmiths have made a further munificent grant of £500 for the prosecution of researches and for the continued treatment of severe cases of infective disease amongst the poor classes.

3. The committee report with regret that Dr. G. Sims Woodhead who has been director of the laboratories since their erection has sent in his resignation, on appointment to the Chair of Pathology at Cambridge. The vacancy has been advertised and the committee will shortly proceed to consider the applications with a view to recommending to the Royal Colleges a suitable candidate for the appointment.

4. The following regulations with scale of charges for testing antitoxic serum have been approved by the committee, viz.:—1. The serum is examined:—(*a*) for potency—i.e., for number of antitoxin units per cubic centimetre; (*b*) for any excess of antiseptic; (*c*) for the presence of micro-organisms. 2. The serum may be sent to the laboratories in bulk and may there—after being tested and bottled—be labelled with the laboratories' certifying labels. 3. When a batch has been bottled away from the laboratories the bottles shall be counted and samples selected by the laboratories' assistant who, after the serum is tested, shall provide labels to be affixed to the bottles and to the cases in which they are contained; these shall be affixed in his presence.

The report was adopted and the Council passed the following resolution:—

That in expressing their regret at the resignation of Dr. Sims Woodhead the Council desire to record their appreciation of the important services rendered by him to the College, to science, and to the community.

The Council received a report from the Committee on the Midwives Bill and discussed and adopted recommendations as to certain alterations in the Bill, and they directed that these recommendations should be forwarded to the Special Committee of the General Medical Council.

The senior Vice-President reported the delivery of the Hunterian Oration by the President on Feb. 14th and the thanks of the Council were voted to the President for his oration, and he was requested to publish it.

The Council appointed the John Tomes Prize Committee which has to recommend the award of the John Tomes Prize which is given every three years for the best original work in connexion with dental science carried out in part at least during the preceding triennium.

A letter was read from Mr. A. W. Fitz Roy forwarding, by

direction of the Lord President of the Privy Council, a circular relating to an international conference respecting the adoption of precautionary measures against syphilis and venereal diseases to be held at Brussels from Sept. 4th to 8th, 1899, and stating that Her Majesty's Government, while not proposing to be directly represented at that conference, are of opinion that it might be desirable that the various medical corporations of the United Kingdom should, if they think proper, take steps with a view to representation thereat. Mr. Alfred Cooper was appointed a representative of the College and Mr. Hutchinson was requested to act also as a representative of the College.

A letter was read from Mr. E. White Wallis, secretary of the Sanitary Institute, stating that the Autumn Congress and Exhibition of the Institute will be held at Southampton on August 29th and following days and inviting the College to appoint two delegates to attend the Congress. Mr. Howard Marsh and Dr. Ward Cousins were appointed delegates.

Mr. BRYANT moved:

That in view of the centenary in 1900 of the foundation of the College by Royal Charter a committee be appointed to consider and report to the Council whether any, and if so what, steps should be taken to celebrate the event.

The resolution was carried and a committee was appointed.

Public Health and Poor Law.

LOCAL GOVERNMENT DEPARTMENT.

REPORTS OF INSPECTORS OF THE MEDICAL DEPARTMENT OF THE LOCAL GOVERNMENT BOARD.

Upon Measles in the Borough of Burton-on-Trent, by Dr. THEODORE THOMSON.[1]—Since his report upon measles in England and Wales, which appeared in the annual volume of the Medical Department of the Local Government Board for 1894–95, Dr. Thomson has continued his investigations in localities where, owing to the disease being compulsorily notifiable or to other circumstances, the etiology of measles and the application to measles of preventive measures can be advantageously studied. The last of Dr. Thomson's reports on the subject was upon a severe outbreak of measles in Lancaster in 1897. The present report deals with similar prevalence of the disease in Burton-on-Trent last year. In all 1015 cases of measles came to the knowledge of the local authority between Jan. 2nd and August 13th. The estimated population of Burton being 51,664, the attack rate per 1000 persons living was thus 39. Only 29 persons died, giving during these seven and a half months the low fatality rate of 14 per 1000 and a death-rate per 1000 of 0·56. The age distribution of the cases in respect of attack and death is given by Dr. Thomson in the following table:—

Age groups.	Estimated population.	Attacked by measles.	Deaths from measles.	Measles attack-rate per 1000 living.	Measles death-rate per 1000 living.	Measles fatality rate per 1000 attacked.
At all ages	51,664	2,015	29	39	0·56	14
0—1...	1,430	148	6	103	4·2	40
1—2...	1,425	217	11	152	7·7	50
2—3...	1,495	235	9	157	6·0	38
3—4...	1,356	309	1	228	0·7	3
4—5...	1,445	315	1	218	0·7	3
Under 5...	7,151	1,224	28	171	3·9	23
5—10	7,150	680	1	95	0·1	1
10 and upwards ...	37,363	111	—	3	—	—

It will be seen that, on the whole, the Burton experience accords with corresponding data which have been obtained in previous epidemics of measles. The chief incidence of *attacks* was in children in the second, third, fourth, and fifth years of life, and more especially in children in the fourth and fifth years, while the chief incidence of *deaths* was in children in the first, second, and third years, and more especially in those in their second year.

That the death-rate from measles in children under one year is commonly considerably less than the rate in children between one and two years has often been apparent from mortality returns. Until lately it has not been possible to do more than surmise whether this difference is due solely to a smaller frequency of exposure to infection which may be assumed in the case of quite young infants. Dr. Thomson's table shows that for Burton in 1898 this was not a complete explanation. The attack-rate for infants under one year was, it is true, less in the proportion of from two to three than the corresponding rate for children between one and two years. But the fatality rate in the first class of cases was also less, the ratio being from four to five. It must, however, be borne in mind that a good many inaccuracies almost inevitably arise in statements of the ages of infants and that the extent of this error is likely enough to be greater in notification of infectious disease than in certification of death. Before definite conclusions can be come to as to the meaning of the differing rates of mortality from measles at the several age-periods, statistics in such form as Dr. Thomson's tables are needed from a large number of different localities and for a series of years. Health officers of districts in which measles is compulsorily notified could in many cases furnish valuable information on this subject.

The relation of school attendance to the maintenance of the epidemic, and particularly to the excessive incidence of the disease upon children between three and five years of age, is discussed in detail in an appendix to the report. "There was no great extension of the disease," observes Dr. Thomson, "until it had gained a foothold among children attending school. This suggests that schools had a large share in the dissemination of measles." Closure of certain schools of the town was resorted to, but the benefit derived from school closure was not very pronounced, probably in large measure because there was too much delay in closing schools and because in invaded areas of the town certain schools were allowed to continue open when their neighbours had been closed on account of measles. The sundry precautions adopted by the Burton Town Council on the advice of Mr. T. Robinson, the medical officer of health, are set out at length and they contain much which calls for commendation and which might be applied elsewhere with prospect of advantage. And so far as the results of precautionary measures were found disappointing, they were chiefly to be attributed to the lack of thoroughness with which these measures were put into practice. "It is doubtful whether the sanitary staff suffices to cope with the ordinary work falling on the health department of a town the size of Burton; it is quite insufficient for the added labour of measures undertaken with a view to control an epidemic of measles." Dr. Thomson lays stress upon the great use of isolation in hospital of cases of measles if employed in inter-epidemic periods, when the isolation accommodation needed is relatively small and when the value to be obtained from isolation is at its greatest.

[1] London, Eyre and Spottiswoode, East Harding-street; Edinburgh, John Menzies and Co.; Dublin, Hodges, Figgis, and Co. 3d.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 33 of the largest English towns 6694 births and 5099 deaths were registered during the week ending March 18th. The annual rate of mortality in these towns which had increased in the four preceding weeks from 19·5 to 22·2 per 1000 further rose last week to 23·3. In London the rate was 24·1 per 1000, while it averaged 22·8 in the 32 provincial towns. The lowest death-rates in these towns were 12·7 in Derby, 16·4 in Portsmouth, 16·5 in Hull, and 16·6 in Leicester; the highest rates were 28·0 in Oldham, 28·8 in Liverpool, 31·5 in Salford, and 31·9 in Manchester. The 5099 deaths in these towns included 417 which were referred to the principal zymotic diseases, against 437 and 409 in the two preceding weeks; of these 136 resulted from whooping-cough, 103 from measles, 88 from diphtheria, 37 from "fever" (principally enteric), 32 from diarrhœa, and 21 from scarlet fever. The lowest death-rates from these diseases were recorded in Croydon, Brighton, Cardiff, and Newcastle-upon-Tyne; and the highest rates in Wolverhampton, Salford, Blackburn, and Preston. The greatest mortality from measles occurred

in West Ham, Manchester, Salford, and Leeds; from scarlet fever in Oldham; from whooping-cough in Plymouth, Swansea, Birkenhead, Preston, Bradford, and Hull; and from "fever" in Wolverhampton. The 88 deaths from diphtheria included 45 in London, seven in Sheffield, five in Liverpool, four in Leicester, and three in Swansea. No fatal case of small-pox was registered during the week under notice either in London or in any other of the 33 large towns; and only one small-pox patient was under treatment in the Metropolitan Asylums Hospitals on Saturday last, March 18th. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of last week was 2437 against 2584 and 2540 on the two preceding Saturdays; 224 new cases were admitted during the week, against 241, 236, and 217 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London which had been 470 and 529 in the two preceding weeks, further rose last week to 565, and were 61 above the corrected average. The causes of 74, or 1·5 per cent., of the deaths in the 33 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Bristol, Cardiff, Nottingham, Salford, and in nine other smaller towns; the largest proportions of uncertified deaths were registered in Liverpool, Blackburn, Preston, and Sheffield.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns which had been 25·1 and 22·8 per 1000 in the two preceding weeks further declined to 21·0 during the week ending March 18th, and was 2·3 per 1000 below the mean rate during the same period in the 33 large English towns. The rates in the eight Scotch towns ranged from 17·5 in Leith and 18·4 in Edinburgh to 21·9 in Glasgow and 27·3 in Aberdeen. The 640 deaths in these towns included 34 which were referred to measles, 27 to whooping-cough, 13 to diarrhœa, six to "fever," five to scarlet fever, and five to diphtheria. In all, 90 deaths resulted from these principal zymotic diseases, against 99 and 67 in the two preceding weeks. These 640 deaths were equal to an annual rate of 2·9 per 1000, which was 1·0 above the mean rate last week from the same diseases in the 33 large English towns. The fatal cases of measles, which had been 33 and 13 in the two preceding weeks, rose again to 34 last week, of which 18 occurred in Glasgow and 12 in Aberdeen. The 27 deaths from whooping-cough showed a slight further decline from the numbers recorded in recent weeks and included 10 in Glasgow, nine in Edinburgh, and four in Dundee. The deaths referred to different forms of "fever" which had been six and four in the two preceding weeks, rose again to six last week, of which four occurred in Glasgow and two in Edinburgh. The five fatal cases of scarlet fever corresponded with the number in the preceding week and included three in Glasgow where four of the five deaths from diphtheria were also recorded. The deaths referred to diseases of the respiratory organs in these towns, which had been 213 and 172 in the two preceding weeks, further declined to 138 last week, and were 23 below the number in the corresponding period of last year. The causes of 33, or more than 5 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin which had been 31·9 and 28·5 per 1000 in the two preceding weeks rose again to 32·4 during the week ending March 18th. During the past four weeks the death-rate in the city has averaged 30·8 per 1000, the rate during the same period being 22·5 in London and 23·0 in Edinburgh. The 217 deaths registered in Dublin during the week under notice showed an increase of 26 upon the number in the preceding week, and included 12 which were referred to the principal zymotic diseases, against 17 and 14 in the two preceding weeks; of these, 10 resulted from whooping-cough and two from diphtheria, but not one either from small-pox, measles, scarlet fever, "fever," or diarrhœa. These 12 deaths were equal to an annual rate of 1·8 per 1000, the zymotic death-rate during the same period being 2·0 in London and 2·6 in Edinburgh. The fatal cases of whooping-cough which had been five in each of the two preceding weeks rose to 10 last week, and exceeded the number recorded in any week since May, 1897. The two deaths referred to diphtheria also exceeded the number returned in any recent week. The 217 deaths in Dublin last week included 35 of infants under one year of age and 58 of persons aged upwards of 60 years; the deaths both of infants and of elderly persons showed a slight further increase upon the numbers recorded in recent weeks. Six inquest cases and three deaths from violence were registered; and 87, or more than a third, of the deaths occurred in public institutions. The causes of 15, or nearly 7 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

STAFF SURGEON HERBERT ELLIOTT MARSH has been promoted to the rank of Fleet Surgeon in Her Majesty's Fleet.

Inspector-General T. H. Knott will succeed Inspector-General H. Macdonnell, C.B., at the Royal Naval Hospital, Haslar, on the retirement of the latter officer in June next.

The following appointments are announced:—Staff Surgeon C. Bradley to the *Colossus*, temporary. Surgeon J. C. Fergusson to the *Victory*, for disposal.

ROYAL ARMY MEDICAL CORPS.

Lieutenant J. S. Gallie holds himself in readiness to embark for Mauritius. Major A. S. Rose is ordered to St. Helena and Lieutenant A. E. Weld to South Africa, for service. Major C. H. Burtchaell has joined at Woolwich. Major A. Stables, on arrival in India, is attached to the Poona Station Hospital. Captain Henry A. Berryman is placed on temporary half-pay on account of ill-health.

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Lieutenant Charles Edward Reading Bucknill, 2nd Volunteer Battalion the East Lancashire Regiment: to be Surgeon-Lieutenant.

VOLUNTEER CORPS.

Artillery: 1st Edinburgh (City): Robert Black Purves to be Surgeon-Lieutenant. 1st Forfarshire: Surgeon-Lieutenant J. F. Sturrock resigns his commission. *Rifle:* 2nd (the Weald of Kent) Volunteer Battalion the Buffs (East Kent) Regiment: Joshua Law Kerr to be Surgeon-Lieutenant. 5th (the Hay Tor) Volunteer Battalion the Devonshire Regiment: William John Stephens to be Surgeon-Lieutenant. 1st Nottinghamshire (Robin Hood): Surgeon-Captain W. J. Sprott resigns his commission. 1st London: Surgeon-Captain E. A. Hughes resigns his commission. 1st Volunteer Battalion the Manchester Regiment: John Orr to be Surgeon-Lieutenant.

VOLUNTEER MEDICAL STAFF CORPS.

The Manchester Companies: Surgeon-Lieutenant W. Gill resigns his commission; Surgeon-Lieutenant A. Phillips to be Surgeon-Captain.

THE LATE OUTBREAK OF FEVER AT QUETTA.

THE new Army Medical Blue Book for 1897 contains a long and exhaustive report on a severe outbreak of enteric fever among the British troops serving at Quetta during 1896. The report is by Major F. R. Newland, M.B. Dub., R.A.M.C. The strength of the European garrison was 2,300, and between April 3rd and Dec. 1st there were 141 cases admitted to the station hospital. There has likewise been an outbreak of the same fever during the past year. The *Army and Navy Gazette* states that a large number of soldiers belonging to that garrison died from the disease during the six months which ended on Dec. 31st last. Quetta has proved an exceptionally unhealthy station for some years past. It was announced more than a year ago that in consequence of the heavy mortality from enteric fever among British soldiers the Government in India had under consideration a proposal to apply for the services of Dr. Wright, Professor of Pathology at Netley.

DEATHS IN THE SERVICES.

Deputy Inspector-General Joseph Jee, V.C., C.B. (retired), Honorary Surgeon to the Queen, on March 17th, at his residence, Queniborough Hall, near Leicester.

Staff Surgeon J. Rose (retired) at Chesterfield on March 7th, aged 76 years. He entered the Royal Navy as Assistant Surgeon in 1847 and served in the *Frolic* during 1848–52. He was at the insurrection of Cephalonia, 1849, and in the following year attended a cholera epidemic in his own vessel as well as on board the *Spitfire*. On returning to England he was appointed Senior Assistant Surgeon at Haslar Hospital.

Correspondence.

"Audi alteram partem."

"DIFFICULTIES UNDER THE NEW VACCINATION ACT."

To the Editors of THE LANCET.

SIRS,—With your permission I should like to reply to the letters of "P. P." and "General Practitioner" in your issue of March 11th and then I have done with the matter. Both these gentlemen seem to consider it "offensive," "undignified and unprofessional," and "irksome" to arrange *with their own patients* a suitable time for "vaccinating those babies they have brought into the world." Surely the family practitioner can settle so small a matter soon after the mother's confinement without loss of dignity, be he never so self-important. To say that such arranging for the child's vaccination at a later stage is either "unprofessional" or "offensive" is simply an abuse of language.

I am, Sirs, yours faithfully,
THOS. FREDK. I. BLAKER,
Preston Park, Sussex, March 20th, 1899. Public Vaccinator.

To the Editors of THE LANCET.

SIRS,—Your correspondent "Fairplay" now attempts to justify the new "duties" of the public vaccinator by declaring that it is also the duty of the private practitioner to visit and offer to vaccinate. I am certain that it is not his duty, and that such offers of professional services are most objectionable. The space for vaccinations in the ordinary visiting lists is for the names of those whom the practitioner has been asked to vaccinate, and for no others. "Fairplay" might just as well suggest that the space for obstetric engagements is for the names of those whom the practitioner has heard are *enceinte* and are to be called on with offers of professional services. Such visits are most offensive to many people who look upon them as an attempt to establish a medical tyranny; they are contrary to the ethical laws that govern our profession and must be irksome to most medical men. I hope, Sirs, when you give your ruling in this matter, you will not lend your countenance to this system of "calling for orders" which has been advocated by more than one of your correspondents.

I am, Sirs, your faithfully,
March 20th, 1899. P. P.

To the Editors of THE LANCET.

SIRS,—The list supplied to me this month by the vaccination officer contains the names of many children who were over four months old prior to August 31st, 1898, for me to notify and visit according to the new Vaccination Act.

The clerk to the board of guardians for this district has since informed me that the vaccination officer had no right to have given the names "of what I call defaulters and wholesale law breakers of the Vaccination Act" to me; he also told the vaccination officer that he should refuse to pay the account when sent in by me. By this I suppose he means the minimum fee of 1*s.* and the vaccination fee for these older children. As this may happen to other public vaccinators, may I ask you through the columns of THE LANCET if I cannot recover both minimum and vaccination fees in all cases of older children that I have notified, visited, and successfully vaccinated, also if I can claim the minimum fee for these older cases I have notified and visited but have not vaccinated? Will you also inform me how, when, and by whom the new Act provides for dealing with these older cases, as I have been asked time after time the following question: "Why are So-and-so and So-and-so who have children much older than mine allowed to escape and nothing done to compel them, whilst I am pounced upon, which is most unfair?" I think you will agree with me that these women made a very just complaint, and to my thinking the sooner these wholesale law-defiers are dealt with, the more general will vaccination become than it is at the present time.—I am, Sirs, yours faithfully,
March 20th, 1899. ANOTHER PUBLIC VACCINATOR.

"THE REMOVAL OF ADENOIDS IN INFANCY."

To the Editors of THE LANCET.

SIRS,—With reference to an annotation in THE LANCET of March 11th under the above heading an account of the following case may interest you. A female child, aged 14 weeks, was lately brought to the Birmingham and Midland Ear and Throat Hospital suffering from very marked obstruction to respiration and a diagnosis of post-nasal growths was made. Mr. F. Marsh, honorary surgeon to the hospital, decided to remove them at once. The child was placed under chloroform and the growths were removed with the aid of a small StClair Thomson forceps, after an attempt to use the finger had shown that thereby injury to the velum would ensue. The operation was entirely successful and in three days the patient left the hospital completely relieved. The child had been largely reared on starchy food.

I am, Sirs, yours faithfully,
R. FELIX RYLAND, M.R.C.S. Eng., L.R.C.P. Lond.,
House Surgeon to the Birmingham and Midland Ear
March 14th, 1899. and Throat Hospital.

UNRESTRAINED LUNATICS.

To the Editors of THE LANCET.

SIRS,—The difficulty in certifying mentioned in a leading article in THE LANCET of March 11th is met by medical men joining the Medical Defence Union which supplies a form of indemnity against actions to its members. During recent years I have declined to certify in cases of insanity unless such a form is signed by the petitioner; in no case in my experience has that indemnity been refused, although it has sometimes been signed reluctantly. The production of that document to a lawyer or a court would be proof that "reasonable care" had been taken. None conversant with this subject can dispute your observation that the state of the law concerning it is unsatisfactory; but when we obtain the indemnity we are no longer liable to "vexatious, harassing, and costly litigation."

I am, Sirs, yours faithfully,
March 20th, 1899. STANLEY HAYNES, M.D. Edin.

HUNTER *v.* CLARE: AN APPEAL.

To the Editors of THE LANCET.

SIRS,—Permit me through your columns to appeal to the profession for subscriptions to a fund for the assistance of the widow of the late Mr. Kingsley Hunter, L.S.A., of Gamlingay. Her pathetic letter published in your issue of March 11th caused me to enter into communication with her in order to get her sanction for this letter. She informs me that the whole of their capital was expended in the purchase of the practice at Gamlingay, which was utterly ruined by the prosecution of her husband, and she is left penniless and will soon be homeless. I sincerely hope that a practical expression of the sympathy which I am sure most of my professional brethren must have for her will be the outcome of this appeal.

Cheques should be made payable to "The Hunter Fund" and may be sent to Gillett's Bank, Oxford, or to

Yours truly,
RIVERS WILLSON.
42, Wellington-square, Oxford, March 20th, 1899.

To the Editors of THE LANCET.

SIRS,—Referring to Dr. Major Greenwood's letter in your last issue I earnestly hope that some effort will be made to assist the unfortunate Mrs. Hunter. I should be quite willing to give a small subscription and I think there must be many others throughout the country who would be glad to contribute their "mite" if only to show their disapprobation of the prosecution of the late Mr. Hunter.

I am, Sirs, yours faithfully,
M. L. DHINGRA, M.D. Edin., D.P.H. Camb.
Finsbury-park-road, N., March 20th, 1899.

To the Editors of THE LANCET.

SIRS,—I shall be happy to give a small contribution towards any fund that may be raised for Mrs. Hunter.

Personally, I strongly disapprove of the action of the General Medical Council in instituting this prosecution and I think Mrs. Hunter is deserving of much sympathy.

I am, Sirs, yours faithfully,

ROBERT A. FRYER, M.B. Edin.

New North-road, N., March 22nd, 1899.

"SALIPYRIN IN INFLUENZA."

To the Editors of THE LANCET.

SIRS,—In THE LANCET of March 18th appears a letter from Dr. Butler Harris drawing attention to the excellent results obtained by the use of salipyrin in influenza. As I have been using a similar compound for two or three years with most rapid relief of the headache, backache, fever, and malaise of influenza, and without any untoward symptoms following its use, I beg to submit it to the readers of THE LANCET. The formula I generally use is as follows: acetanilide, 30 grains; spirit of chloroform, two drachms; spirit of camphor, one drachm; salicylate of soda, one and a half drachms; water to six ounces; one ounce to be taken every four hours until relieved. In dispensing this, owing to the slight solubility of acetanilide, the spirit should be added first and the water added by degrees. The mixture contains always light flocculent crystalline masses floating near the surface and directions have to be given that the mixture must be well shaken each time of taking. Even in cases where the pulse is most feeble I have seen rapid improvement without the slightest bad symptom, evidently owing in some measure to the stimulating effect of the camphor and alcohol. In most cases the sense of relief is attended by copious perspiration. The cost of the above combination is so much less than salipyrin that I recommend it especially to those practitioners who like myself have a great number of poorer-class patients who cannot afford to pay for very expensive prescriptions. I have three times had occasion to use it myself when attacked by influenza and each time with rapid convalescence, and in over 100 cases among my patients the compound has been invariably successful.

I am, Sirs, yours faithfully,

H. LYON SMITH, M.R.C.S. Eng., L.R.C.P. Edin.

March 12th, 1899.

SURGERY OF PANCREATIC TUMOURS.

To the Editors of THE LANCET.

SIRS,—In the discussion on Mr. Barker's paper at the Clinical Society of London[1] I said that Krönlein had removed a *tumour*, not a "cyst," as reported. It was an angio-sarcoma "as big as a fist." His original communication, with a fine coloured drawing of the post-mortem appearances, will be found in the *Beiträge zur Klinischen Chirurgie*, vol. xiv., 1895, p. 663. A solid tumour of the pancreas, if not left alone altogether, must be taken away, as there can be no question of drainage.

I am, Sirs, yours faithfully,

ALBAN DORAN.

Granville-place, Portman-square, W., March 21st, 1899.

"THE INFECTIOUSNESS OF PHTHISIS."

To the Editors of THE LANCET.

SIRS,—I see that in an annotation in THE LANCET of March 18th dealing with the action brought by the Leas Hotel Company against the executors of the late Radclyffe Hall it is stated that a witness for the defence said that my father, the late Dr. C. E. Fitz-Gerald, had certified the cause of death wrongly. I think it is a thousand pities that I was not called as a witness in the case, as I also saw the deceased once during life, my father having seen him twice, and having ample opportunity to ascertain the nature of the disease I could have positively asserted that in my opinion my father's certificate was right and that acute pulmonary phthisis was the cause of death. I have already certified the same for an insurance company and have also carried on a correspondence concerning the disinfection necessary with both the manager of the hotel and also the solicitor to the deceased. It is extremely unpleasant to us to have my late father's certificate impugned.

With regard to a matter appearing in THE LANCET of March 11th, 1899, concerning my late father's paper entitled "The Just Position of Bacteriology," may I be allowed to state that I have no acquaintance whatever with Mr. Maurice L. Johnson and that his letter quoting my father's late paper was entirely outside my knowledge? The paper was my father's last and the view taken was a favourite one with him and I published it out of respect for his memory.

I am, Sirs, yours faithfully,

E. D. FITZ-GERALD, M.R.C.S. Eng., L.R.C.P. Lond.

Folkestone, March 20th, 1899.

[1] THE LANCET, March 18th, 1899, p. 768.

MONOPOLIES IN THERAPEUTICAL MEASURES.

To the Editors of THE LANCET.

SIRS,—The letter of Mr. Tallerman which appeared in THE LANCET of March 18th supports only too strongly the grave objection which I have long felt in common with many balneologists in this country to the altogether unnecessary interference on the part of lay inventors in the domain of therapeutics. No department of medical practice is perhaps more open to exploitation of this objectionable character than that presented by balneological therapeutics, but it is only within the past four or five years that we have been confronted by a new and more grave aspect of this evil. Hitherto we have been accustomed to the competition of that large army of unqualified practitioners (male and female) which derives such wide support at the hands of a credulous public, but now we are met by claims on the part of outsiders the character of which will be better realised when the profession has had time to grasp their full significance.

The medical profession, in this country at least, is made up very largely of men who devote a great part of their lives and much money to investigating disease and devising methods for the alleviation and cure of human suffering, and "cursed" in the eyes of his professional brethren would be the medical man who refused to make known any useful discovery or who by patent law or otherwise should limit to his own selfish ends the therapeutic value of any method of treatment whatsoever. Is it tolerable, then, that we should be asked not only to sanction but to support outside the profession practices which we justly condemn within our own ranks? In expressing these views I hold no brief for any particular hot-air apparatus. In truth, although I recognise certain advantages pertaining to each I consider them all to be more or less mere adaptations of principles and methods long known in balneological practice.

In conclusion, and briefly, I would put the case thus. If the medical profession does not possess men sufficiently scientific and inventive to devise suitable and efficient apparatus to carry out its own methods of treatment let us at least demand from the outside inventor, as a condition precedent to our recommending or using his apparatus, that he shall apply to it the same principle of free and unrestricted use which we are ourselves in the habit of applying under similar circumstances.

I am, Sirs, yours faithfully,

Buxton, March 18th, 1899. SAMUEL HYDE.

"THE TALLERMAN TREATMENT AND ITS COUNTERFEITS."

To the Editors of THE LANCET.

SIRS,—I have read with surprise Mr. Tallerman's letter in your issue of the 18th inst. ..... In reply to the letter I may safely leave the press and the profession to take care of themselves. With regard to myself I totally deny the suggestion that I was aware of any apparatus at Mr. Tallerman's or elsewhere of a similar character to my own being in existence at the time my patent was granted and in this opinion I am supported by a leading firm of patent agents, who, at my request, made a most exhaustive search at the Patent Office. .....

I am, Sirs, yours faithfully,

ARTHUR E. GREVILLE.

Upper Berkeley-street, Portman-square, W.

*** This controversy must now cease in our columns. We omit certain personalities from Mr. Greville's letter.—ED. L.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

The General Hospital.

THE present time of the year is one in which the local charitable institutions hold their annual meetings. Prominent among these is that of the General Hospital, the 119th report of which has just been issued. The Board of Management state that the ordinary income in the year 1898 was £15,028, against £11,000 in the two preceding years. The extraordinary income was £7677, against £8050 in 1897, when the proceeds of the Musical Festival amounted to £5000. The number of in-patients last year was 4913 and of out-patients 60,128. The ordinary expenditure was £23,490 8*s.* and the extraordinary £500 19*s.* 6*d.* The report points out that a considerably increased income is necessary to maintain the demands of the new hospital. A systematic inquiry has been conducted into the social circumstances of the patients applying for treatment, the result of which it is promised will be carefully considered; but while it is only right that first aid should be rendered to all cases of accident or sudden emergency, continued treatment should only be given to those who are not in a position to pay for medical attendance. An ophthalmic surgeon, a dental surgeon, and a radiographer have been added to the staff by which additions the usefulness of the hospital will be increased.

The General Dispensary.

The annual meeting of the governors of this institution was held on Feb. 22nd. The 105th report showed that the amount received from subscriptions together with supernumerary tickets was £5452, from investments £879, from donations £1122, and from legacies £1268. The expenditure showed an advance of £374 arising from an increase in the medical staff. The number of patients admitted by ticket was 40,434. The average cost of patients was 3*s.* 10*d.* and a fraction. Dental cases and accidents numbered 7396. The Lord Mayor who presided expressed the opinion that the governors were right in appealing to the suburban districts by their branches, and he deprecated the paying of subscriptions through the Hospital Sunday Fund instead of the ordinary channels.

The Training Institution for Nurses.

The committee in their annual report express their satisfaction in the undiminished activity and usefulness of this institution. They regret to announce the death of Mrs. Diamond who for 23 years had performed the duties of superintendent with the greatest ability. During the year 584 families had been attended. The number of nurses on the staff was 73. The income exceeded the expenditure by £46 and a sum of £100 had been paid to the sinking fund. A separate place for quarantine and a sanatorium was pointed out as a great advantage, as also the addition of a handsome pension fund for nurses who might be disabled after 10 years' service.

A Hospital for Diphtheria.

The advisability of establishing a hospital for the treatment of diphtheria has been the subject of some correspondence with the Health Committee. There is practically no provision in the health equipment of the city for meeting this difficulty and the advantages of obtaining such a hospital have been forcibly pointed out. There is always a reluctance on the part of the authorities to admit such cases into the general hospitals and it is feared some hesitation on the part of nurses to take charge of such cases, not so much from fear of infection and danger to themselves as from the risks of a possible lengthy illness and convalescence. There is said to be accommodation of an ample kind at the small-pox hospital, where the unused part ought to be set aside for such cases. This is a suggestion which demands attention and no doubt will receive the fullest consideration by the Health Committee.

Allegation of Cruelty.

Considerable comment has been made on the action of a police constable who tested the consciousness of a woman who had been assaulted by her husband. The officer in order to ascertain the woman's condition thrust a needle under the thumb-nail of the woman; she did not feel it at the time, but subsequently complained of much pain at the spot. The case was considered by the Watch Committee of the City Council who ascertained that no harm was done though such a test should not have been applied by the officer. The local press express the opinion that they thus justified an illegal act.

March 20th.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Children and Epileptics at Crumpsall.

SOME questions interesting to our profession have recently been discussed by the Manchester Board of Guardians. At one of the meetings it was proposed to renew a subscription of 10 guineas to the Cancer Pavilion and Home, and it was stated that "the hospital provided a permanent home for pauper patients who could not be properly treated at their homes," and also "that they could not deal with those special cases at the Crumpsall Hospital." Was it intended that the State hospitals, as they may be called, such as the large and well-appointed institution at Crumpsall, should be relieved of their chronic and incurable cases by sending them to hospitals supported by voluntary subscriptions? As to the ability to deal with special cases at Crumpsall one of the guardians very properly said that they "ought not to detract from the ability of the medical staff," and as a matter of fact the Manchester guardians have for many years past, in addition to their very competent resident medical officers had the advantage of visiting physicians and surgeons of the highest attainments, capable of dealing with any cases coming under their care quite as well as if they were placed in special institutions. The proposal to continue the subscription was lost. At the last meeting of the guardians, Mr. Jenner Fust, the Poor-law Inspector, made some strictures with regard to the accommodation for female epileptics, saying that the yards were very small and got very little sun. As there was land behind he thought that they could be enlarged without any very great expense. It is satisfactory to learn that there has been a considerable decrease in the number of ophthalmic cases and Dr. Reynolds says that it seems to be permanent. In years gone by it was a great scourge among the children at the workhouse. Mr. Fust said it would be very desirable if the whole of the children could be removed from Crumpsall "where the quarters were not the best for children" and were required for other classes. At the workhouse, of course, all the surroundings are pauperising for the children who, if they know no other life, grow up simply to perpetuate the race of paupers. That, indeed, was so throughout the country, but happily better ideas now prevail and more intelligent efforts are made to help them to a less degraded life. The schools of the guardians at Swinton, though of the type now called barrack schools, have been for many years admirably conducted, and Mr. Fust thought that the children should be taken there. He was "pleased to see that the committee had been working in harmony with, and together with, the Society for the Prevention of Cruelty to Children." The chairman of the Crumpsall and the Swinton committees promised that Mr. Fust's suggestions should be carefully considered.

Influenza in Manchester.

Manchester is suffering from a considerable prevalence of influenza and some inconvenience has been caused, it is stated, in factories and workshops and various other places of business. One employer has had 20 per cent. of his workmen away with the influenza and, as he puts it, "other reasons," the disease being the excuse. The many and sudden changes of weather lately have no doubt had a good deal to do with the catarrhal attacks also very prevalent. In these days almost every cold in the head is called influenza, but undoubtedly both what may be called the specific and non-specific catarrhs have caused much sickness. Last week the deaths from all kinds of chest disease were 103 and the week before 92, but it is hoped that the tide will soon turn. But it is never safe to prophesy, and so far as the weather has any influence, that of the last few days has been of a character to justify any of the epithets used in dispraise of March. Salford has fared better than Manchester, Broughton, or Pendleton. Adults have been chiefly affected while children have escaped. At the board schools while influenza has attacked many of the teachers it has spared the scholars. Happily this visitation of the

disease is less severe and less fatal than some former epidemics.

The Explosion of Ether at the Rochdale Workhouse.

The recent explosion of ether at the Rochdale workhouse by which the superintendent nurse lost her life and another nurse was very seriously injured is a matter which should be carefully investigated. According to the evidence at the inquest opened on March 14th the surgery is a small room with two doors having spring locks. There was a narrow high cupboard containing "bottles of ether and medicine." One nurse sat with her back to the fire, apparently taking an inventory of the bottles, and the other was counting those on one of the upper shelves, when an ether bottle accidentally fell against another bottle and, "being thin at the neck, broke." There was an immediate explosion, blowing out some of the window glass and setting fire to the furniture and woodwork. The superintendent nurse was found in a semi-conscious state, while the other managed to get out though badly burned. The coroner adjourned the inquest for a fortnight in the hope that the surviving nurse would be able to tell them how the explosion occurred and to give an opportunity for the attendance of the inspector of explosives. The inquiry into this deplorable occurrence will, it is to be hoped, lead to an explanation of the fact that the nurses seemed to have the management of the "surgery" and presumably were allowed to dispense.

Isolation Hospitals.

For some time past a strong feeling has existed in many parts of Cheshire against making what is now considered the necessary provision against epidemic visitations. At Lostock Gralam and at other parish meetings in Mid-Cheshire resolutions were passed the other week "condemning in the strongest terms the attempt of the Cheshire County Council to force upon the Northwich rural district a large and costly isolation hospital for the treatment of infectious diseases." There are wooden structures in existence which were described as adequate for the requirements of the district. The county council have intimated that an inquiry will be made as to the provision of joint or separate hospitals for the Northwich and Winsford urban districts. The question "is provoking much feeling in Mid-Cheshire." The feeling arises probably not so much against sufficient provision being made as from the fear of the extravagant and unnecessary spending of money sometimes indulged in by public bodies.

March 22nd.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Edinburgh University Court.

AT a meeting of the Edinburgh University Court on March 13th Dr. Andrew Davidson (Edinburgh) was appointed Lecturer on Diseases of Tropical Climates for a period of three years from May next. The Court approved of the arrangements proposed by the Senatus under which Dr. E. W. Carlier should carry on the work of the Chair of Physiology until the end of the current session and also, in conjunction with the additional examiner, the work in connexion with the ensuing examinations in physiology for graduation in medicine and science. The Court, on the recommendation of the Senatus, resolved to institute a lectureship in diseases of the skin and appointed Dr. W. Allan Jamieson (Edinburgh) as University lecturer on that subject. In connexion therewith the Court approved of a recommendation of the Senatus that in addition to the two courses, one of which candidates for medical degrees are required to attend, that there should be a further option of "a course of clinical instruction in diseases of the skin, given by a University lecturer or by a recognised teacher at not less than 20 meetings in the wards of a recognised hospital or in the wards of a hospital and in a dispensary, both recognised for the purpose." At the same meeting intimation was made of a bequest of anatomical drawings to the University by the late Sir John Struthers, Emeritus Professor.

The Chair of Physiology in Edinburgh University.

It is understood that the following gentlemen are candidates for the chair of Physiology in Edinburgh University: Dr. D. Noel Paton, a former assistant of Professor Rutherford and for many years lecturer on Physiology in the Edinburgh Extra-Mural School; Professor G. M. Stewart, Cleveland University, Ohio; Professor Waymouth Reid, Dundee College; Professor Schäfer, University College, London; Professor William Stirling, Owens College, Manchester; and Professor Anderson Stuart of Sydney.

The Edinburgh University Rectorial Address.

On the afternoon of March 14th Lord Balfour of Burleigh delivered the rectorial address to the students of Edinburgh University in the McEwan Hall—the first occasion on which the McEwan Hall had been used for the Lord Rector's address. The proceedings having been opened with prayer, Professor Sir Ludovic Grant, Dean of the Faculty of Law, presented Lord Balfour of Burleigh for the honorary degree of Doctor of Laws. After the degree had been conferred Lord Balfour delivered the address, taking as his subject, National Character and the Function of the Universities in forming the Character and in Preserving, Developing, and Strengthening it. He spoke of the pride which they felt in the national character. They had a right to say, looking back on the past that the nation possessed certain distinctive qualities of which they did well to be proud and in which their pride was an inspiring and not a foolish thing. As a nation they had grown from the age of small things by a cautious courage and a spirit of prudent adventure; they had been ready to hide their differences and to draw closer in moments of common danger; they had adhered to certain ideals, had made their rule over subject nations a synonym for prosperity, and had shown that they could maintain justice as the guiding star in every department of administration. Had they not shown that they were ready "to take up the white man's burden" in every corner of the world, and had they not as a nation striven to recognise their responsibilities? On what did this national character rest? He believed that national character was not a mere instinct or tradition, not only a dominating temperament, but a matter of intellectual and moral discipline to the application of which they must attend and for which they were, each in their own place, individually responsible. He suggested that the foundation of this discipline was to be found in university life rightly understood. Intellectual training was the soundest and most essential foundation for national character. It was a purblind and prejudiced view that looked on the universities as places which are divorced from life's activities instead of the recruiting depôts from which the armies of practical life are to be reinforced.

A Complimentary Dinner to Dr. John Wyllie.

The members of Professor Fraser's clinique at the Edinburgh Royal Infirmary entertained Dr. John Wyllie to dinner on March 16th. Mr. Arthur Preston presided over a company of between 70 and 80. Mr. T. Grainger Stewart and Mr. Ramsay Munro acted as croupiers. Dr. Slight and Dr. Gilmour, the resident physicians, were also present as guests. In proposing the health of Dr. Wyllie, the chairman said that in taking steps to have Dr. Wyllie appointed as interim professor of clinical medicine Professor Fraser had never more thoroughly manifested the interest which he took in his students. When Professor Fraser announced that Dr. Wyllie would discharge his duties the announcement was received with acclamation by the large class of clinical medicine. At that time the present generation of students knew of Dr. Wyllie by reputation. They now knew how well earned was that reputation; there was one hour in the day to which they had all looked forward with pleasure, and that was the hour which they spent with Dr. Wyllie. Personal contact with Dr. Wyllie had endeared him to all who had the good fortune to be members of his clinique. The students of Professor Fraser felt themselves each under a personal obligation to Dr. Wyllie for having undertaken the duties which Professor Fraser in his absence had imposed on him. Dr. Wyllie, in replying, expressed the pleasure it had been to him to be once again among medical students whom he delighted to teach and have around him. Professor Fraser's health was proposed by Mr. Bashford. Mr. Munro proposed "The Ward, its Residents and Nurses." Dr. Slight, Dr. Gilmour, and Mr. Stewart replied. The health of the chairman was proposed by Dr. Wyllie. Members of the company provided singing and music and a very enjoyable

evening was spent. During the winter Dr. Wyllie has gathered round him the largest clinique in the Royal Infirmary, upwards of 120 men attending. Notwithstanding so large a number Dr. Wyllie's method of teaching has been such that equal benefit has accrued to all.

School of Medicine of the Royal Colleges, Edinburgh.

The number of students attending the classes of the school during the winter session now closing was 1217.

Dealing with the Slums in Aberdeen.

The municipal corporation has now acquired all the property scheduled under the Aberdeen Improvement Scheme Provisional Order which deals with an unhealthy area adjoining Exchequer Row. It has been resolved to take down a number of the dwelling-houses in the interior of the area so as to admit light and ventilation to the narrow, foul-smelling alleys or closes. A large building on the margin, at present used as a private common lodging-house, is to be converted into a tenement dwelling-house for occupants to be displaced by the demolitions and the other common lodging-houses in the area are not to be re-let. There is, however, room for about 125 more lodgers in the recently opened corporation lodging-house in East North-street.

Sanitation in Aberdeenshire.

The reports by the sanitary inspectors of the eight districts of Aberdeenshire for 1898 show that the sanitation of the villages in the county as to water-supply, drainage, and scavenging is, generally speaking, good, and that there is a continued advance in the sanitary condition of workmen's dwellings in the rural localities.

Enforcement of the Vaccination Act in Aberdeen.

At the last meeting of the Aberdeen Parish Council a letter was read from the Local Government Board intimating that the Board was quite unable to countenance the procedure of the council in failing to renew the prosecution of defaulters under the Vaccination (Scotland) Act, and pointing out that before taking extreme measures an endeavour could be made to remove objections by offering glycerinated (and therefore sterilised) calf lymph from the central institution which was conducted under the auspices of the Government. The parish council resolved that in purchasing lymph from the central institution the council should obtain a guarantee that the lymph was pure and would produce no injurious effects, so that medical officers might be in a position to certify the quality of the lymph to those objecting to vaccination, and that consideration of the Board's letter be deferred till a reply was received.

St. Andrew's Ambulance Association.

This association which has centres in various towns of Scotland has now been incorporated by Royal charter.

Inter-University Athletic Sports.

It is stated that sports have been arranged between the Universities of Glasgow, Edinburgh, and Aberdeen, and that the first meeting will take place in Aberdeen in May or June next.

March 22nd.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Royal College of Surgeons in Ireland.

MR. MCARDLE of St. Vincent's Hospital recently made an accusation of religious partiality and bigotry against the Royal College of Surgeons in Ireland in an address which was published in the morning papers. The *Irish Times* of March 20th contains a reply and refutation in the form of a letter signed by the four Roman Catholic members of the Council of the College. This communication quotes what Mr. McArdle is reported to have said—viz.: "That out of the numerous class of Catholic students, many of them distinguished, it has failed to select one to occupy any position of trust or emolument. Occasionally a paltry examinership is offered to some safe gentlemen for spite and the Council has thrust upon it or absorbs a unit from the body to which we belong." The letter points out that in addition to four Catholic members of Council elected by the College there are three examiners elected by the Council all professors in the Medical School of the Catholic University—namely, Dr. Birmingham, Dr. Coppinger, and Dr. Smith. It regrets that up to the present there is no Catholic Professor in the College, but makes the remark that as an indication of the liberal temper of the College of the three candidates who were recently nominated for commissions in the Royal Army Medical Corps two were Catholics. The above letter was signed by Mr. Meldon, Mr. Lentaigne, Mr. Chance, and Dr. Cranny. Mr. McArdle's accusation has fallen flat, for he had the honesty to mention that he himself was a rejected candidate for an examinership in the College. It had, however, the effect of eliciting a letter from Mr. Myles, the Vice-President of the College, and a leading article in the *Irish Times*, as well as the letter just described, all in defence of the College.

Mater Misericordiæ Hospital, Dublin.

The following appointments were made on March 16th: Martin Dempsey, M.D., M.R.C.P. Irel., to be physician; and John O'Donnell, M.B., B.Ch. R.U.I., to be assistant physician. Arrangements are being made to establish a convalescent home in connexion with this hospital, now the largest clinical hospital in Ireland.

The Death-rate of Belfast.

The present Lord Mayor of Belfast (Mr. Otto Jaffe) has frequently drawn attention to what has been the universally admitted low estimates made by the Registrar-General (who lives away from Belfast in the atmosphere of Dublin) of the population of Belfast. According to the census in 1891 the inhabitants of the city numbered 255,950, but since that date the population has gone on increasing, so that now the Registrar-General calculates the death-rate on an estimated population of 308,960. The city accountant of Belfast estimates the present population as at least 356,184 and he arrives at this figure by allowing 4·40 persons to each of the 80,951 ratings in the city, the census returns of 1891 showing that there were 4·75 persons to each rating, and the Belfast city accountant reduces this 4·75 by 0·35 for vacancies and so arrives at his estimate. When recently in Dublin the Lord Mayor interviewed the Registrar-General on the subject and he undertook to reconsider the matter if he could have an authenticated return of the vacant houses which had lately been quoted by certain Dublin newspapers as from 12,000 to 14,000. As a result the Belfast police on March 13th took a census of the vacant houses and found only 5540. The reasons for there being these vacant houses are that a number are built during the winter when general employment is scarce and these are not occupied until May. Again, many houses are calculated in this number which are not quite finished, being without gas-fittings or water-pipes, and there is also a desire to abandon the old class of houses which have not yet had their sanitary arrangements remedied. Further, there is a tendency, owing to the extension of the tramway lines, to live further away from the centre of the city. As a result of this house census it turns out that the Lord Mayor's estimate of from 358,000 to 360,000 as the population of Belfast is not far from the mark, but if even the figures of the city accountant (356,184) are adopted by the Registrar-General instead of his own calculation, 308,960, it will completely alter the health statistics of Belfast, and show that the published death-rate is much too high. The whole discussion shows that statistics give anything but safe conclusions unless there can be no question of the correctness of the figures.

The late Dr. O'Hara of Ballymena.

At a largely attended meeting of the friends of the late Dr. O'Hara held in Ballymena on March 15th it was decided to inaugurate a fund, to be called the "Dr. O'Hara Memorial Fund," with the object of perpetuating the memory of the late Dr. O'Hara in Ballymena and the surrounding district where he practised. A large sum has already been subscribed

Irish University Education.

It is generally thought here that after the Duke of Devonshire's speech last week so far as the existing Government and the present Parliament are concerned the Irish University question will not be touched and that Mr. Balfour's promised changes will for a time be postponed. Two reasons for this course are assigned—first, the anti-ritualistic wave which is said to be passing over England and, secondly, the failure to come to a clear and definite agreement with the Roman Catholic hierarchy in Ireland. It was that body which left Mr. Gladstone in the lurch when

he tried to settle the question in 1873 and it is said that Mr. Balfour was determined that until he got a clear and definite pledge from them that they accepted his solution of the question as final he would not attempt to advocate the question any further. Irish university matters are now in a worse condition than ever. All parties are dissatisfied with things as they are and yet when an attempt is made to come to a settlement there would seem to be much opposition from some as well as apathy on the part of others who are calling out most loudly that there must be a change.

The Prevention of Consumption.

The Lord Mayor of Belfast having received requisitions signed by a large number of members of the medical profession as well as by representative ratepayers of the city has convened a public meeting of the citizens to be held in the Town-hall on Tuesday, April 4th, to consider the desirability of taking steps to form in the city a branch of the National Association for the Prevention of Consumption and other forms of Tuberculosis. Sir William Broadbent, Bart., M.D. Lond., is coming to speak at the meeting.

The Nursing Circular of the Local Government Board.

The recent circular issued by the Local Government Board requiring nurses to be trained in clinical hospitals is causing considerable discussion and bad feeling. Dr. J. C. Hall, J.P., surgeon to County Monaghan Infirmary and medical officer of the Monaghan Workhouse Hospital, having been requested by the board of guardians to state his opinion of this nursing circular did so fully and freely as a man of his thorough independent character would be expected to do, whereupon the guardians received a letter from the Local Government Board in which they declared that they communicated with Dr. Hall who admitted that his observations as formulated by the clerk of the union were correct. The Board go on to say that "they consider it would be subversive of all discipline in the Poor-law service if the officer who is bound to conform to the regulations was permitted with impunity to use language the object of which is to encourage resistance to the orders issued for the guidance of the local authority and its affairs. In the case of an officer of Dr. Hall's rank and standing the offence is particularly serious and in the event of its repetition would lead the Local Government Board to consider whether he was any longer fitted for the position of medical officer of the workhouse." It need hardly be said that this threat of the Local Government Board to instantly dismiss a man of Dr. Hall's position should he on any further occasion dare to express an opinion adverse to any circular which they may formulate is deeply resented by the medical profession.

The Glenties Medical Libel Action.

This case which has occupied several days in hearing at the county Donegal Assizes in Lifford concluded on March 20th. It was an action brought by Mr. Kelly, dispensary medical officer, Glenties, against the proprietor of the *Londonderry Sentinel* and two members of the Glenties Dispensary Committee for libel against all three and for conspiracy against the two latter, the other defendant having been struck out of the count for conspiracy. The whole matter, as the judge in his summing up pointed out, turned on the question whether a resolution (accusing the medical officer of neglect of duty) which formed the subject matter of the alleged libel was not duly passed at a certain dispensary meeting, but was "hugger-muggered" through after the ordinary business and sent to the *Sentinel*, and that it was for the jury to say, the judge pointed out, whether there was a conspiracy on the part of the two members of the Dispensary Committee. The judge said he could not see how the apology which had been made by the editor of the *Sentinel* could be fuller. The jury found for the medical officer as against the two members of the Dispensary Committee and awarded £100 damages on each count, and found for the defendant, the editor of the *Londonderry Sentinel*. They held that there was negligence but not gross negligence in the publication of the resolution complained of.

The Holidays of the Irish Poor-law Medical Officer: A New Rule.

A circular was received by the Cork Board of Guardians from the Local Government Board intimating that in future Poor-Law medical officers will be entitled to a month's annual holiday and that substitutes must be paid by the guardians. One of the guardians present at the meeting stated that as a result of the new order Cork Union would be obliged to pay £350 a year for medical substitutes and whilst he did not object to their medical officers getting a holiday he considered that the guardians ought to have had some previous intimation on the subject in order that the financial aspect of the question might be adequately discussed. He then pointed out that if the order had been issued in the year 1897 half the £350 would have been paid by Government, but now the total sum must come out of the local rates. Other guardians took the same view and a resolution was unanimously adopted calling on the Local Government Board to provide half the cost of the substitutes for the medical officers of the union. It was also decided to forward a copy of the resolution to all the other boards of guardians in Ireland with a view to concerted action. It must be satisfactory to the medical officers to find that it was to the incidence of cost and not to the principle of paying the substitutes that the guardians objected.

A Homicidal Lunatic.

Last week a terrible tragedy was enacted in Kerry. A young man named O'Donnell became suddenly mad, belabouring his mother till he had reduced her head to a pulp. He then threw her out on the road and rushed off in a half-nude state, attacking everyone who chanced to come in his way. One of his victims hurried to a police station for assistance and fortunately the constables were soon able to grapple with the unfortunate man and prevent him from doing further mischief. He was promptly transferred to the Killarney Asylum and it is stated that this is the third occasion on which it has been found necessary to commit him there. Two years ago when living on a small island he armed himself with a pitchfork and attacked the other islanders who were obliged to barricade their houses. He has been under restraint during the past eight months and was regarded by his relatives as quite recovered. Now an important question for the general public, and no doubt an anxious one for medical superintendents of asylums, is—how should lunatics with homicidal tendencies be dealt with during what may prove to be mere lucid intervals? On the one hand, are they to be permanently deprived of their liberty and maintained by the ratepayers? and, on the other hand, must those residing in their immediate vicinity look forward to the possibility of being at any moment butchered in cold blood?

March 22nd.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Wounds of the Abdominal Wall with Extrusion of Intestine.

AT the meeting of the Society of Surgery held on March 1st sundry cases of successful operation for wound of the abdomen with extrusion of the intestines were narrated. M. Regnier showed a patient upon whom he had operated for a wound of the abdominal wall accompanied by extrusion of one metre of intestine and this perforated in three places. He drew a comparison between this case and that of a woman upon whom he had also operated successfully for extrusion of the intestine through the ruptured scar of an umbilical hernia. M. Bazy related a successful operation by M. Faure for a wound of the abdomen with protrusion of two metres of intestine. M. Tuffier related the case of a patient operated on by his house surgeon for a gunshot wound in which the gut was perforated in eight places. M. Pozzi referred to a case in which a sudden hernia took place in a woman who had been quite recently operated upon by laparotomy. Her recovery was as equally uneventful as in the other cases cited.

The Campaign against Pulmonary Tuberculosis amongst the Poor.

Dr. Latulle, physician to the Boucicaut Hospital, who has already tried in his wards experimental isolation of tuberculous patients and who has for some time past strenuously advocated the erection of sanatoria for tuberculous patients, has published an article dealing with the whole subject which has excited much attention. In this article he enters an earnest protest against the slowness with which the Assistance Publique deals with the reforms so necessary in the matter. He criticises severely the system which obtains in the Paris hospitals of setting apart wards for tuberculous patients, a system productive of no good results, inasmuch as those actually dying from tuberculosis are herded together

with those in whom the chance of recovery is by no means remote. It is impossible to treat this last class which is by far the most important and the numbers of which Dr. Latulle estimates at from 3000 to 4000 per annum in the manner so necessary for their condition without removing them from the middle of the town. Dr. Latulle sums up his conclusions very neatly as follows. He would have special wards in the hospitals for the incurable cases of tubercle, for in such cases the hygienic treatment is useless and if carried out would represent an enormous expense quite out of proportion to the good which might accrue in possibly an exceptional case. Further, for such tuberculous patients as offered a chance of cure and were either unwilling or unable to leave Paris he would have small wards built where the treatment by air, rest, and feeding could be begun and carried on during the time that the patient was being urged to go to one of the country sanatoria. For the building and maintenance of these last he would allot the greater part of the money now spent upon prophylaxis—although this has its uses—and upon treatment. At the present moment there are no sanatoria in France such as exist in other countries for the use of the poor who suffer from tuberculosis. Except the convalescent homes for tuberculous children which do a great deal of good there is but one sanatorium actually at work in France—that at Cimiez, which makes up 20 beds. At Lyons the Hauteville Sanatorium has just been built and is on the point of being opened. It contains 100 beds. At Amiens, Havre, Rouen, and Orleans such buildings are only in the projection stage. Paris has her sanatorium at Augicourt which has cost an enormous sum, the money to pay which has yet to be found. It contains 300 beds and although finished two years ago has not yet received a single patient. The expense of keeping up the place is a terrible lesson for the administration of the Assistance Publique. For the future it is intended to build only small sanatoria but many of them, and the actual buildings are to be put up as cheaply as possible so as to supply more beds. Unhappily, the generous sacrifices made in France for the carrying on of the warfare against tuberculosis have been mainly expended upon architects and builders and, as at Augicourt, there is no money left for the patients after the buildings have been erected.

The Treatment of Tetanus by Intra-cerebral Injections.

At the annual meeting of the Society of Surgery held on March 8th, M. Quénu read the notes of five cases of tetanus treated by intra-cerebral injections of tetanus antitoxin. The first case, which had been under the care of M. Beunier, was that of a woman, aged 48 years, in whom tetanus developed eight days after the infliction of a wound. Chloral, morphia, and lumbar puncture were all tried in order to relieve the spasms but in vain. Recourse was therefore had to intra-cerebral injections, but the patient died. The second case was that of a young girl in whom the injections were used some days after the onset of the disease. She died also. M. Quénu mentioned three other cases, in all of which a fatal result occurred. On the other hand, he felt bound to mention that M. Villon had reported two cases in which cure had followed treatment by injections both intra-cerebral and subcutaneous. M. Quénu concluded by saying that the prognosis in a case of tetanus was most uncertain. According to M. Peyrot and M. Berger good results have been obtained from excision of the focus of infection. M. Chaput and M. Ricard have each reported a case of death after intra-cerebral injections. M. Lucas-Championnière said that no treatment could be definitely recommended. He had seen patients with tetanus die after amputation and others recover. If a case turned out badly it was not right to blame the medical man for having pursued one course of treatment rather than another. The curative value of either amputation or the use of serum was still far to seek.

Notes on News.

M. Napias, the head of the executive department of the Assistance Publique in Paris, has made it known to the public that the out-patient departments of the hospital will in future be available on Sundays and holidays. As on ordinary days the doors of the out-patient department will be open from eight o'clock in the morning until nine. The doors will then be shut. The new regulations will come into force on Sunday next, March 26th.

Dr. Durand Fardel died on March 20th from pneumonia at the age of 48 years. The deceased was a member of the Academy of Medicine and an inspector of the State mineral water-springs. He has done very good work and was a Chevalier of the Legion of Honour.

March 22nd.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

The Utility of Gargling.

THE utility of gargling in diseases of the throat has been denied by several observers, as, for instance, by Dr. Kantorowicz. Gargles nevertheless continue to be prescribed by the majority of medical men and constitute one of the principal methods of treatment in those cases. In order to ascertain whether there are valid reasons for maintaining this practice Dr. Sänger has made some experiments the results of which he has published in the *Münchener Medicinische Wochenschrift*. He points out that the therapeutic utility of gargling depends on whether the fluid employed reaches the pharyngeal mucous membrane and the tonsils or not, and for the purpose of arriving at a definite conclusion he brushed the tonsils of a patient with methylene blue and made him afterwards gargle with water. In the result the water when rejected from the mouth was colourless, neither was there any blue tint visible in the interior of the mouth although the tonsils continued to be intensely blue. Obviously, therefore, the fluid had not reached the tonsils. The same result was obtained in every instance. In another series of experiments the velum, a portion of the tongue, and the tonsils were dusted with wheat-flour, after which the person made use of a gargle consisting of a solution of iodine in glycerine, the consequence being that the velum and the tongue showed the blue colour of starch acted on by iodine, whilst the flour on the tonsils was neither coloured nor washed away. Dr. Sänger therefore concludes that gargling is useless and that where this kind of local treatment is indicated it would be better to swab the pharyngeal mucous membrane with pieces of cotton wool, avoiding brushes, which are liable to injure the mucous membrane.

Operative Treatment of Pulmonary Gangrene.

Professor Körte, surgeon to the Urban Hospital, recently exhibited before the Berlin Surgical Society a patient on whom he had operated for gangrene of the right pulmonary apex. The man was 32 years of age and became ill five weeks before with pyrexia, cough, and fetid expectoration. As the disease progressed considerable fragments of the lung were coughed up and a large cavity in the right apex was recognised by percussion. The patient was accordingly admitted into the surgical department of the hospital and an operation was performed. A large circular incision was made under the clavicle extending to the axilla and a piece of the second rib was resected. The pleural cavity was found to be obliterated. There was a stratum of normal tissue one centimetre (0·4 inch) in thickness and then the thermo-cautery penetrated into an extensive cavity filled with putrid material. A large pulmonary "sequestrum" was situated at the entrance of the principal bronchus. The patient made a comparatively quick recovery and his lung now contains a large cavity with a healthy granulating surface.

The Balneological Societies.

The congress of the Balneological Societies was opened on March 3rd, Professor Liebreich being in the chair. The first address was delivered by Professor Klemperer on dietetic methods followed at health resorts. Dietetic treatment at mineral water health resorts was, he said, essentially the same as at home, being modified only by the chemical or physical qualities of the springs. A patient suffering from obesity ought to live at home in the same way as in Marienbad, eating and drinking in moderation, but not necessarily according to precisely formulated rules. The quantity of food must, of course, be diminished, especially the amount of fat and carbohydrates, and abuse of alcoholic liquors must be forbidden. Too prompt a reduction of weight may be followed by nervous troubles. In gout there are not as yet scientific data on which to found standards of diet, the causes of the disease not being completely known. Generally a vegetarian regimen is to be recommended, but in a certain number of serious cases it is essential to maintain the patient's strength by the use of a mixed dietary.—Dr. Immelmann discussed the diagnosis of

pulmonary tuberculosis by means of the Roentgen rays. The rays in passing through the normal lung filled with air do not cast a distinct shadow on the fluorescent screen, but pulmonary infiltrations give rise to a comparatively deep shadow. With a series of patients suffering from pulmonary catarrh a shadow was obtained on the screen and after four months the patients were found to be phthisical. In another series of cases where the lungs on transillumination gave no shadow the patients were all found to be in good health after the lapse of four months. The Roentgen rays may therefore be useful in diagnosis under certain circumstances.—Dr. Schuster of Nauheim exhibited skiagrams of patients with heart disease.—Dr. Sarason of Hamburg described Finsen's treatment of lupus by exposure to electric light which has an irritating and bactericidal action penetrating to the deeper strata of the skin. The published results showed 146 cures among 296 patients; 84 were still under treatment. The average duration of the treatment was four months.—Professor Liebreich read a paper on the strong defensive power which the cells of the human body are capable of exerting against micro-organisms as proved by the researches of Metchnikoff. The healthy and vigorous cell is able to destroy the bacteria or to immure them as in pulmonary tuberculosis. It must therefore be the aim of rational treatment to strengthen the cells, so that they may be competent for this duty, and with this object all available means, dietetic, physical, and pharmacological, must be applied.—Other papers related to winter health resorts on the Baltic, to terrrain cures (i.e., walking uphill), to cyclo-therapy, and to the treatment of syphilis in mineral water health resorts.

March 20th.

ROME.

(FROM OUR OWN CORRESPONDENT.)

Tragedy in the Siena School: Suicide of Professor Cantieri.

THE Nestor of the Sienese medical faculty, Dr. Alessandro Cantieri, Professor of Clinical Medicine in the local university, one of the most esteemed consultants and teachers in the Italian kingdom, committed suicide with a rifle at 11 A.M. on March 14th. He was found dead sitting in his armchair in his private room. He had one foot bare, having doubtless tried to draw the trigger by its means, but not having succeeded with this he availed himself of the walking-stick with curved handle which lay beside him. The explosion must have taken effect instantaneously, as the cranium was horribly shattered, while, strange to say, no detonation was heard even by his servant who entered the room a few minutes afterwards to announce a visitor. Two letters lay within reach—one open, one sealed—both of them addressed to his daughter who kept house for him. In the open letter he declared himself weary of life through having incessantly to pay debts contracted by relatives, while he could no longer at his advanced age (78 years) earn the income by which he could have met these demands with ease. In a postscript he added: "Non sono pazzo. Conosco e so pienamente quello che sto per fare" (I am not mad. I have full understanding and knowledge of what I am about to do). For the rest of the day and for all the day following the University was closed in token of sorrow and respect for the deceased. And so disappears from the Italian professional world a familiar and ever-welcome figure, particularly at the periodical congresses, national and provincial. A son of Siena, from his boyhood upwards he was educated at her schools, preparatory and final. Medicine was the calling of his early choice and after a thorough course in the Sienese class-rooms and cliniques he proceeded to Florence and put the finishing touch to his qualifications at the Istituto di Studi Superiori. He graduated in 1844 and thought it best to go at once into general practice as conducing to the consultant's most profitable training and laboured for some years as "medico condotto" (salaried medical officer) at Castelnuovo Berardenga and at San Gemignano. He never regretted this experience. On the contrary, he congratulated himself on the practical resource and self-reliance which it gave him when he passed from it to the medical clinique of Professor Burresi in the Sienese University to whom he acted as assistant. His rise was now rapid. For some years he held the chair of special medical pathology and from this he was promoted to that of general clinical medicine of which he continued to his death "professore ordinario." He was a steady, indefatigable worker, discharging the duties of his class-room and clinique with "conscientious alacrity," while in private practice he acquired a numerous *clientèle* by his judgment and skill. As already stated, he was a frequent attendant at the professional congresses, seldom intervening without making them memorable by some original or suggestive memoir or by some acute and impartial while always perfectly courteous criticism. In 1894 he celebrated the jubilee of his graduation in medicine and the occasion evoked an extraordinary demonstration of loyalty and affection from grateful pupils at home and abroad. To the last he kept in the closest touch with the University and though by weight of years compelled to drop the bulk of his practice he never failed to appear with the old punctuality in the class-room or the Istituto Anatomico. In fact, on March 13th, at 11 A.M., just 24 hours before his death, he assisted in the Istituto at the necropsy of a woman who had died in his clinique. Of such a man, lost to life, to science, and to the profession in a manner so tragic, the funeral obsequies could not fail to be impressive. Not only the University, as stated, but all the scholastic institutions of Siena were closed for the day, and the Faculty of Medicine undertook at its own expense, aided by the Minister of Public Instruction (Baccelli), who contributed 400 fr., to make the "last scene of all" worthy of the deceased. The hearse was followed by the entire University staff, professors, private lecturers, and assistants; by all the practitioners of the city and many of the province; and by the students bearing a banner draped in black and two crowns, one in the name of the undergraduates of all faculties, the other in the name of those of the fifth and sixth medical years—the bulk of them members of Professor Cantieri's class and clinique. The *personnel* of the various hospitals and charitable institutions came next; then a long train of carriages, the whole route being lined with the public, all of them lifting hats respectfully as the procession passed on. A pause was made under the "loggiato" or porticoed gallery of the Convitto Nazionale Tolomeo and funeral orations were pronounced by the Rector of the University, Professor Barduzzi, by Professor Falaschi as spokesman of the medical faculty, and by various other orators representing the many interests—professional, municipal, and charitable—with which the deceased was more or less intimately associated. Thereafter the procession resumed its march till it reached the Cimitero Comunale in which Professor Cantieri had expressed a wish to be interred.

March 18th.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

Federal Quarantine.

AT the Federal Council sitting in Melbourne in January a Bill was introduced dealing with federal quarantine, to come into force "when and so soon as the Governor of New South Wales notifies to the Governors of Victoria, Queensland, and Western Australia, that the Government of New South Wales formally agrees to contribute under the provisions of the Act a proportionate part of the expenses connected with its execution." The prime object of the measure is to secure uniformity in quarantine administration in all the colonies and to apportion the cost of maintenance on the basis of population. The difficulty is that New South Wales has not joined in the scheme and until it does Victoria will have to bear the chief portion of the expense. In the Council the Bill passed its first and second reading *pro forma*, on the understanding that its consideration in committee should stand over. The Bill proposes to appoint "federal health officers" with headquarters at Thursday Island, Albany, Adelaide, and Palmerston. The salary and tenure of the appointments are to be fixed by the Governor in Council of the colony concerned and the holders of the appointments will be allowed private practice. The officers are to inspect every vessel arriving in port from "beyond sea"—i.e., outside Australian waters—and a list of questions to be put to masters and ship surgeons is specified.

Presidential Address.

Dr. R. B. Duncan, the retiring President of the Medical Society of Victoria, took as the subject of the customary valedictory address, "Wound Treatment, Past and Present." He

reviewed the changes in the treatment of wounds during the last 30 years and pleaded for greater uniformity in the application of the principles of antisepsis and asepsis. He deprecated the growing custom of using dressings, sutures, &c., just as they leave the hands of the wholesale manufacturer. While asepsis was the ideal, there were so many difficulties in its practical attainment under ordinary conditions that the mixed method was the safest. He strongly urged the necessity of frequent bacteriological examinations of the dressings, sutures, ligatures, and scrapings from the hands of surgeons and nurses and of the discharge from the wound. The early detection of infection and the prompt use in such cases of antitoxins, according to the nature of the infection, would lead to a diminished mortality from tetanus and septicæmia. Dr. Duncan further insisted upon the necessity of manufacturing antitoxins and protective serums in Australia, where the scanty and precarious supply and almost prohibitive price of these agents seriously interfered with their proper use. The address concluded with a warm panegyric upon Lord Lister, "the greatest benefactor of the human race so far as the saving of human life is concerned."

Death of Sir Alfred Roberts.

Sir Alfred Roberts, Kt., M.R.C.S. Eng., L.S.A. Lond., died on Dec. 15th, 1898, at the ripe age of 75 years. His life was one of constant and successful effort to realise a high ideal as a cultured gentleman and a high-minded practitioner. His name is identified with the Prince Alfred Hospital, Sydney, which will ever be a monument to his zeal and assiduity. To his action when a member of the Board of Health was also due the construction of the Little Bay Hospital for Infectious Diseases. He was born in London and he completed his medical course at Guy's Hospital. He arrived in Sydney in 1854 and rapidly acquired an extensive practice. He was soon appointed one of the surgeons to the Sydney Infirmary, a position he held for 18 years. During that period he organised the nursing arrangements and introduced the training of nurses, a plan soon followed in the other colonies. He was examiner in medicine at the Sydney University and honorary secretary to the Prince Alfred Hospital.

Appointments.

A rearrangement of posts in the hospitals for the insane in Victoria has been made. Dr. McCreery will henceforth act solely as inspector-general and is relieved of the charge of the Kew Asylum and Mr. Beattie Smith has been transferred from Ararat to Kew as superintendent. Mr. Barker goes from Ballarat to Ararat and Dr. Lethbridge goes to Ballarat. Mr. Godfrey becomes senior medical officer at Kew and Dr. Steell at Yarra Bend. Dr. R. H. Todd has been appointed deputy coroner in Sydney in place of Dr. Rennie. The new deputy coroner is a barrister-at-law as well as a doctor of medicine. Dr. Mary Vaughan Cowan has been appointed assistant surgeon to in-patients at the Children's Hospital, Melbourne.

Feb. 1st.

NEW ZEALAND.

(FROM OUR OWN CORRESPONDENT.)

Annual Meeting of the New Zealand Branch of the British Medical Association (concluded from p. 734).

A MEETING of the Council was held on Jan. 4th, 1899, in the University Buildings, Auckland. Present: Dr. Pollen (representing Wellington), Dr. Gibbs (Nelson), Mr. Fleming (Otago), Dr. Pabst and Mr. Dawson (Auckland), Dr. Mason and Dr. Cleghorn (Canterbury), Dr. Fell (President of the Branch), and Dr. Scott (President-elect), who took the chair. A considerable amount of correspondence and accounts were gone into and dealt with, among which was the notification that the Hawkes Bay Section had disbanded from the Branch. Another matter introduced by Dr. Gibbs (Nelson) was a subject to which I have frequently referred in these columns—viz., the resuscitation of the *New Zealand Medical Journal*. The fact is now being recognised that it was a misfortune that the journal was ever allowed to collapse. In reference to this matter Dr. Gibbs said that a year ago a recommendation was sent from the Nelson Section to the Council in Wellington that the association existing between the New Zealand Branch of the British Medical Association and the *Australasian Medical Gazette* should be dissolved and that the New Zealand Branch should resume the publication of their own journal, and he asked if any reply had been sent to that recommendation. The general secretary informed him that no reply had been sent. Dr. Gibbs then pointed out that the *New Zealand Medical Journal* had cleared expenses and fully paid its way. They had now had two years of the *Australasian Medical Gazette* and the second year showed that the circulation had decreased. The general secretary explained that during the first year it was obligatory on members to take the *Gazette* while it was not so during the second year and consequently the circulation had fallen from 170 in the first year to 105 in the second year. The Nelson Branch notified that they intended to give notice of a motion that the *New Zealand Medical Journal* should be resuscitated under the auspices of the New Zealand Branch of the British Medical Association. Dr. Fell stated that he had spoken to Dr. Barnett about the editorship of the *Australasian Medical Gazette* and that Dr. Barnett had informed him that he intended to place his resignation in the hands of this meeting because he felt that he had not received the support which he might have expected from members of the profession practising in the colony and he thought perhaps that somebody else ought to undertake the duties pertaining to the office so as to make it a success if possible; but nevertheless he would be willing to continue his editorship of the *Gazette* if it should be the wish of the meeting. It was then resolved: "That this meeting acknowledges its indebtedness to Dr. Barnett for his editorship of the *Australasian Medical Gazette* and requests him to continue his editorship pending the consideration of a notice of motion given by the Nelson section to the effect that the *New Zealand Medical Journal* should be resuscitated." This is as it should be; it is high time that we had our own journal again. Medical men practising in this colony can interchange ideas and keep records of their own individual work and experience far better by means of a journal published in this colony than by one published in Australia. The original *New Zealand Medical Journal* was, in my opinion, a decided success when it was edited and published in Dunedin. Surely there are men capable and energetic enough still among us to undertake the task of editor.

Dr. Saunders (Wanganui) attended before the Council and explained the position of the Hagey and similar institutions in New Zealand. In the course of his remarks he said that it appeared to him to be necessary for some medical man to come before the Council with the object of endeavouring to prevent members of their profession from "covering" in any shape or form a body of unqualified persons. As soon as these people—he referred more especially to the Hagey Institute—were exposed in one part of the colony they obtained a fresh footing in some other town and by means of advertisements for the bichloride of gold treatment for narcotism and alcoholism they succeeded in establishing a syndicate and did a great deal of harm. Lately, during November, there were two cases of sudden death in his district, both of the deceased having been recently subjected to this bichloride of gold treatment for alcoholism. In one case—a case of suicide—he was called by the police to see the deceased and in the course of the investigation before the resident magistrate the fact was elicited that the people who ran this bichloride of gold cure for drunkenness made the astounding statement in court that *they in every case had a medical certificate sent by a duly qualified medical man as to the health of the individual before he was subjected to the treatment.* He said that astonished him very much and he told the magistrate in court that he knew that that proceeding was altogether unorthodox and contrary to the ordinances of the profession and if he knew of any medical man who covered them in that way he would report the matter to the proper authorities. He did not desire in any way to individualise any person or persons but he merely came before the Council with the object of seeing what could be done to stop these proceedings on the part of medical men in the future. It would not be necessary for him to go into the whole story of the bichloride of gold cure for drunkenness, how it originated in America about 25 years ago, and how an attempt was made to thrust it on the English market. He thought that great credit was due to the action of the Society for the Study of Inebriety and to the Temperance Society of London for their action in regard to this matter. THE LANCET in 1892 published a vast amount of most instructive information concerning the

methods of the original promoter (a Dr. Keeley) and as a result was indicted for libel. Dr. Keeley, however, wisely withdrew from the case. It was discreditable to the medical profession that any member of it should "cover" institutions like the Hagey Institute in any way. He thought that the members of the Council would agree with him that this practice must be put a stop to, and the sooner this was done and the greater the publicity which was given to the fact that the members of the medical profession in New Zealand would not countenance anything of the kind the better. He had said enough, he thought, to show how urgently necessary it was to do this, for these "American Institutions" as soon as they were defunct in one place went to another and advertised in the local papers that they had patients from all parts of the colony. To his certain knowledge the managing director of the American Institute in his district (they called it the American Institute there) publicly notified that patients came from all parts of the colony for treatment. He thanked the members of the Council for the patience with which they had listened to him and said that he thought that if the Council would act in the way which he had suggested they would be doing something beneficial to certain members of the profession who were acting, to his way of thinking, contrary to medical ordinaces.

Resolved: That the subject be referred to the general meeting with the recommendation that a notice be sent to all the medical men in the colony advising them that the Council intend referring this subject to the General Medical Council in London should any case come before their notice of a member of the profession attaching himself to such an institution.

Dr. Mason (Otaki), our Parliamentary representative, announced that the Government was now prepared to import serum in bulk. It would go to Wellington and on application any medical man could have a supply of it. Further, if any medical man sent pathological specimens for examination they would be reported on free of charge. It is intended, too, that tubes of culture media for ordinary diseases are to be forwarded to all medical men on application—they would be placed in the hands of the local officers in the various districts of the colony. It was suggested, too, that the Government should appoint an officer in the large centres to whom the medical men would be able to return their tubes for report. The media developed at blood heat so that there was no difficulty in cultivation. It was resolved that a hearty vote of thanks be tendered to the Government for its action in reference to this subject.—Dr. Fell in supporting this motion drew attention to the fact that it was solely due to Dr. Mason's energy and tact that they were enabled to thank the Government for such advantages.

On Jan. 5th Dr. Mason read a very interesting paper on Malignant Œdema; Amputation at the Thigh; Recovery. The paper was illustrated by the author's cultures of the bacillus which were well portrayed. Dr. Truby King followed with a paper on the Scientific Feeding of Calves, and in a very interesting lecture he demonstrated how the weight of the calves depended on the manner in which they were fed. This is a subject of the highest importance seeing that now public attention is being directed to the desirableness of preventing the spread of bovine tuberculosis.

On Jan. 6th Dr. Macgill showed with great success the practical Widal test for the diagnosis of enteric fever. It was a very interesting demonstration. Dr. Pabst followed with some valuable remarks on the same disease from a clinical aspect and Mr. Baldwin gave a series of statistical tables showing the actual number of cases of enteric fever treated in the Auckland Hospital for a long series of years past. It was evident to all present that Mr. Baldwin (the resident surgeon to the Auckland Hospital) had taken immense pains with this subject and illustrated as his tables were by excellent diagrams the result of his work should be found in the future a very valuable record for the hospital archives. It is evident that the Auckland medical men have had their attention of late directed very closely to this disease for Dr. Macgill followed with some excellent remarks on the same subject from a bacteriological point of view. That the Auckland Hospital itself is far in advance of what it used to be is a certain fact. It is clean, well managed, and well provided for in all details. Its general surroundings are in marked contrast to what existed only a few years ago when, in my opinion, it was anything but a model institution.

On Jan. 7th it had been arranged to wind up the annual conference by means of a harbour picnic. An Auckland Harbour picnic is a thing to be remembered—the beautiful scenery, the splendid fishing, and the kindly hospitality of the Aucklanders being well known to me personally; but this year it was not to be, for a real change was in store for the visiting members of the profession. The Government granted in a very generous manner a special trip to the world-famed sanatoria of Rotorua to all members of the profession attending the conference. The trip was to be free of cost and two special carriages were supplied. About 40 members of the profession took advantage of this kind offer and one and all enjoyed themselves greatly. There can be no doubt whatever that the present Government of New Zealand, although accused on a great many counts, cannot be indicted by the medical profession for not answering to any "knock at their door" for assistance when required, the Premier (the Hon. R. J. Seddon) being the first on all occasions of medical conferences to do whatever is possible to further our discussions and to render our stay, wherever the rendezvous may be, pleasant and satisfactory to all concerned.

Feb. 3rd.

Obituary.

DEPUTY INSPECTOR-GENERAL JOSEPH JEE, V.C., C.B., HONORARY SURGEON TO THE QUEEN.

DEPUTY INSPECTOR-GENERAL JOSEPH JEE died at his residence, Queniborough Hall, near Leicester, on March 17th. He received his education at the Universities of London and of Edinburgh and also at the École de Médecine at Paris. In 1842 he joined the 1st Dragoons as assistant-surgeon and became surgeon in 1854. Eight years later he was appointed surgeon-major and subsequently he retired with the rank of honorary deputy inspector-general in 1868. During these years he saw much service. For his conduct in the Persian War of 1857, including the night attack and battle of Kooshab and the bombardment of Mohumrah, he received the medal with clasp. He served with Havelock's column in the several actions leading to, and ending in, the relief of the Residency of Lucknow and its subsequent defence, ending in the final capture of Lucknow. He was present with Brigadier Campbell's column in the affairs of March 20th and 21st, and also in the Rohilcund campaign in 1858 and the capture of Bareilly, receiving the medal with two clasps, the Companionship of the Bath, and a year's service for Lucknow. He received the Victoria Cross "for most conspicuous gallantry and important services on the entry of the late Major-General Havelock's relieving force into Lucknow on Sept. 25th, 1857, in having during action (when the 78th Highlanders, then in possession of the Char Bagh, captured two nine pounders at the point of the bayonet), by great exertion and devoted exposure, attended to the large number of men wounded in the charge, whom he succeeded in getting removed on cots and on the backs of their comrades until he had collected the dooly bearers who had fled. Subsequently on the same day in endeavouring to reach the Residency with the wounded men Surgeon Jee became besieged by an overwhelming force in the Mote-Mehal, where he remained during the whole night and following morning, voluntarily and repeatedly exposing himself to a heavy fire in proceeding to dress the wounded men who fell while serving a 24-pounder in a most exposed situation. He eventually succeeded in taking many of the wounded through a cross fire of ordnance and musketry safely into the Residency by the river bank, although repeatedly warned not to make the perilous attempt."

HENRY JOHN BUTLER, L.R.C.P. LOND., M.R.C.S. ENG.

THE death took place on March 10th of Mr. Henry J. Butler of Bradford, Yorks, at the early age of 35 years. The cause of death was blood-poisoning following the prick of a safety-pin sustained whilst dressing a case of empyema. From the point of local infection the disease rapidly became general and after 10 days of great suffering death ended the illness. Mr. Butler was a native of Bradford and was educated at the St. James's Church School and the Bradford

Grammar School. After a successful student's career at the Leeds School of Medicine he filled the post of house physician at the General Infirmary, Leeds. 12 years ago he commenced practice in Bowling, Bradford, and quickly built up for himself a reputation as a conscientious and skilful member of his profession. He was very popular with his patients and was deeply respected by his fellow-practitioners. He was a member of the committee of the Bradford and District Medico-Ethical Society and he took great interest in its affairs. It was only on the evening before his fatal misadventure that he read a paper before the society upon the question of Hospital Abuse. A special meeting of the same society which was called for March 10th met and adjourned as a sign of respect to his memory after passing a vote of sympathy with Mrs. Butler in her sad loss. The funeral was attended by 30 or 40 of the medical men of the city as well as by several of the clergy and ministers of the district. The peculiarly sad circumstances surrounding Mr. Butler's death caused a deep impression upon the minds of all who knew his genial character and large numbers of the general public paid their last respects to his memory upon the day of his funeral. He has left a widow and three children.

HENRY JOHN KNIGHT, M.R.C.S. ENG., L.S.A., J.P.

VERY tragic circumstances attended the death of Mr. H. J. Knight of Rotherham who was found unconscious and in a dying state in his partner's consulting room on the afternoon of March 12th. At the inquest evidence was given to the effect that he had for some years been liable to periods of mental depression which had become worse since the death of the last of his brothers about a year and a half ago. One of these attacks had been continuing for the last two months and he had also complained of distressing cardialgia. The medical evidence was that a half-ounce bottle of prussic acid kept in the adjoining dispensary was found to have been emptied and that the use of the stomach-pump together with the administration of stimulant remedies failed to avert a fatal issue. A despairing note in the deceased's handwriting was also found in his pocket and the jury immediately returned a verdict of "Suicide during a state of temporary insanity." Mr. Knight received his professional education at the Sheffield Medical School and at St. Bartholomew's Hospital. He became qualified in 1858 as M.R.C.S. Eng and L.S.A. and had been in practice in Rotherham since 1864. Being very popular and highly respected he was chosen to fill several prominent public positions, such as churchwarden, manager of the national schools, president of the Rotherham Orchestral Society, &c.; he was also a Justice of the Peace for the borough. The utmost sympathy was everywhere expressed for the family and the funeral was very largely attended, among those present being the mayor and several members of the corporation, together with representatives of the churchwardens, of the Sheffield Medico-Chirurgical Society, and of the Rotherham School Board.

WILLIAM JOHN ALLKIN, M.R.C.S. & L.M. ENG., L.R.C.P. & L.M. EDIN.

THE death of Mr. Allkin of Denton on March 9th at the age of 60 years has called forth universal sympathy and regret in the district. For many years he had a large general practice extending over a wide area. He was much beloved for his genuine kindness and the poor of the district will miss his unobtrusive but ready charity. For more than 30 years he was medical officer of health of Denton and Haughton, and of Audenshaw for more than 20 years. For 22 years he was medical officer of the parishes of Denton and Audenshaw and factory surgeon for 17 years. His father was the first vicar of St. George's, Hyde. He was a Churchman and in politics a Conservative, but he avoided "the wrangles of the public platform," as publicity had no charms for him. His funeral was very largely attended by friends and the representatives of public bodies, while in the procession were mournful crowds of his fellow townspeople.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. George H. Rohé, Professor of Therapeutics and Materia Medica in the College of Physicians and Surgeons, Baltimore.—Dr. M. J. Saraiva, Professor of Hygiene in the University of Bahia.—Dr. Etheridge, Professor of Midwifery in the Rush Medical College, Chicago.—Dr. Tarnovski, Director of the St. Petersburg Maternity Hospital.—Dr. Desrosiers, Professor of Materia Medica in the Laval University, Montreal.—Dr. Bouchard, Professor of Anatomy in the Bordeaux Faculty of Medicine.—Dr. Julius Samuelsohn, the well-known Cologne ophthalmologist, at the age of 58 years.

Medical News.

SOCIETY OF APOTHECARIES OF LONDON.—In March the following candidates passed in the subjects indicated:—

Surgery.—C. J. Coleman, Cambridge and Birmingham; A. G. C. Davies (Section I.), Guy's Hospital; R. L. Gowland (Sections I. and II.), St. Mary's Hospital; H. W. Hues, Birmingham; and W. A. H. B. Smith, King's College Hospital.

Medicine.—H. S. A. Davies (Section I.), Michigan; H. H. J. Edwards (Section I.), St. Thomas's Hospital; F. Golding Bird, Guy's Hospital; V. S. Partridge (Section I.) and R. C. Robertson, Charing-cross Hospital; and W. P. Williamson, McGill.

Forensic Medicine.—H. S. A. Davies, Michigan; H. H. J. Edwards, St. Thomas's Hospital; P. J. Fitzgerald, Dublin; V. S. Partridge and R. C. Robertson, Charing Cross Hospital; H. Whittaker, Cambridge; and W. P. Williamson, McGill.

Midwifery.—W. P. Allen, Birmingham; J. T. Crowe, St. Mary's Hospital; H. H. J. Edwards, St. Thomas's Hospital; W. M. Hocken, Liverpool; H. L. Laidman, Manchester; C. C. Morgan, St. Bartholomew's Hospital; F. C. Torbitt, Manchester; W. P. Williamson, McGill; and T. Young, St. Bartholomew's Hospital.

The diploma of the Society was granted to the following candidates, entitling them to practise medicine, surgery, and midwifery: Messrs. W. A. H. B. Smith and H. W. Hues.

FOREIGN UNIVERSITY INTELLIGENCE.—*Strasburg:* Dr. H. Eggeling has been recognised as *privat-docent* of Anatomy.—*Utrecht:* Dr. Heinrich Snellen is about to succeed his father, to whom he has hitherto been assistant, as Professor of Ophthalmology.—*Vienna:* Dr. Winternitz has been appointed Extraordinary Professor of Internal Medicine.

THE LATE MR. R. GRIFFITH.—Mr. Richard Griffith, L.R.C.P., L.R.C.S. Edin., of Glyn Neath, Glamorganshire, died on March 17th, at the age of 38 years. On Feb. 14th, as reported in THE LANCET, Mr. Griffith was thrown from his horse and sustained a fracture of the base of his skull. The deceased who was surgeon to several collieries in the district leaves a widow and two children.

PRESENTATIONS TO MEDICAL MEN.—On March 4th, at the Miners' Hall, Haswell, on the distribution of certificates to the successful students of the ambulance class held amongst the Tuthill quarrymen and others, Mr. S. A. Fothergill, L.R.C.P. Edin., M.R.C.S. Eng., of Haswell, the teacher of the class, was the recipient from the members of an easy-chair as an acknowledgment for his instructions.—On March 7th Mr. John T. Dickie, L.R.C.P., L.R.C.S. Edin., who has been in practice at Loanhead for the past 16 years, was entertained to a banquet in the Balmoral Hotel, Edinburgh, on the occasion of his leaving the district. A company of about 60 ladies and gentlemen assembled. Provost Gunn (Loanhead) presided and on behalf of Mr. Dickie's friends in the Loanhead district presented him with an illuminated address, a writing-desk, and a chair, together with pieces of silver for Mrs. Dickie.—The members of the Chippenham branch of the St. John Ambulance Society have presented Mr. W. T. Briscoe, M.D., M.Ch. Dub., with a hunting flask in appreciation of his services as honorary lecturer to the class.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Food Standards.

IN anticipation of the Committee stage of the Sale of Food and Drugs Bill Sir CHARLES CAMERON has given notice that he will move to insert in the Bill the following new clause, viz.:—

"The Board of Trade shall appoint a Standing Committee of Reference on Food Standards to be composed as follows: each of the following bodies, that is to say, the Local Government Board, the Board of Agriculture, the Society of Public Analysts, the General

Medical Council, "the Institute of Chemistry, and the Pharmaceutical Society shall name a representative and the Board of Trade shall, if it think fit, appoint such nominee to be a member of the Standard Committee of Reference on Food Standards. But if the Board of Trade object to any person so nominated it may require any of the bodies aforenamed to nominate three persons, from whom the Board of Trade shall select one as the representative of the body on the said Standing Committee, and the principal officer of the Government Laboratory at Somerset House shall, *ex-officio*, be a member of the said committee. And the said Standing Committee shall be empowered to make such order as they think proper from time to time respecting standards of the quality and purity of food, and such orders, if and when they have been confirmed by one of Her Majesty's Principal Secretaries of State, shall have the force of law."

The Conscientious Objector.

The Bill to repeal the Conscientious Objector Section in the Vaccination Act of last year came on for second reading on Wednesday, March 22nd, at a time when only non-contentious business could be taken and as it was opposed the order had to be postponed. There is very little chance of the Bill ever being discussed in the course of the present session.

HOUSE OF COMMONS.

THURSDAY, MARCH 16TH.

Medical Officers in the Navy.

Captain NORTON asked the First Lord of the Admiralty whether it had been brought to his notice that certain medical officers who entered the Royal Navy in 1878 and went through the 128 days' course of naval and military hygiene at Netley (at that time compulsory) on half-pay had not been allowed to count that time for promotion, while others who joined the service some months later and were given direct commissions afloat, in consequence of what was then known as the Russian war scare, the hygiene course in their case being dispensed with for the time, had been promoted over the heads of the former through the latter having more full pay time; and whether, in order to remedy this, he would consider the advisability of altering the rules of the service so that the period of training at Netley Hospital might reckon as naval service for all purposes and so that the prospects of these senior officers for promotion from the rank of fleet surgeon to that of deputy-inspector-general might not be prejudiced.—Mr. MACARTNEY replied to the question saying: Certain medical officers were entered for immediate service in 1878 and did not go through the usual course at Netley. One of these officers after serving afloat applied to be allowed to go through the course and his time was allowed to count as a special case, as his application was a voluntary act and made under the impression that the time would count. It is not considered desirable to alter the rules, but directions have been given that when the time approaches for the promotion of officers entered in 1878 to the rank of deputy-inspector-general their positions on the list shall be specially considered.

Cerebral Fever in the Soudan.

Mr. PIRIE asked the Under Secretary of State for Foreign Affairs whether the Government had any information as to the state of health of the native troops quartered at the present moment in the Soudan; whether it was the case that they were suffering to a great extent from cerebral fever from which, even if the attack did not end fatally, the patient never permanently recovered; what had been the mortality amongst those troops since our taking possession of the Soudan; and what was the percentage of deaths among those attacked by the cerebral fever.—Mr. BRODRICK replied: We have received no detailed report as to the state of health of the native troops at present in the Soudan, but such reports would naturally be addressed to the Egyptian and not to Her Majesty's Government. It is known that the troops operating on the Blue Nile have suffered severely from the climate there and the Egyptian army generally have been subjected to considerable strain during the last 12 months. Statistics as to mortality and sickness will be called for.

FRIDAY, MARCH 17TH.

The Petroleum Question.

Mr. JESSE COLLINGS said, in answer to a question, that the Bill of the Home Office based on the recommendations of the Select Committee on Petroleum and Accidents arising from the Use of Petroleum Lamps will be introduced as soon as possible after Easter.

Medical Service in the Army.

When in Committee of Supply on the Army Estimates the House discussed at great length the case of a private of the 17th Lancers who died in Ballincollig from a clot of blood on the heart while undergoing punishment for breach of discipline. In the course of the debate it transpired that the medical man called in by the military authorities was not registered and this fact was severely commented upon by several members.—Dr. CLARK insisted that a serious mistake had been made, while Captain NORTON declared that during the last 10 or 12 years they had never had in the army anything but the sweepings of the medical schools.—Mr. CARSON, the representative of Dublin University, advocated a return to the system of associating the medical officer with the regiment.—Sir HENRY CAMPBELL-BANNERMAN who was Secretary of State for War in the last Administration addressed himself especially to this point. He reminded the House that there was a great deal to be said on the other side of the question. The evils of the old system, he said, were glaring and notorious. When the change took place, 26 years ago, he was a very subordinate official in the War Office and he knew that all the best opinion and experience in the medical service were in favour of the adoption of the general hospital organisation as superseding the regimental organisation. Everyone would see the advantage, and he need not dwell upon it, of having a medical officer in the regiment living among them and taking a fatherly or brotherly interest in the men; but, on the other hand, that medical officer obtained little experience in professional life, having little experience beyond one or two classes of diseases and he would lose some of that tone and fibre which should be the possession of an experienced medical authority. That was one of the arguments which might be used, but it was not a question the House could now enter upon, and he only wished to warn those who were inclined to jump to the conclusion that a return to an antiquated discarded system would prevent accidents like these that the result would be more likely to be in the opposite direction. The dearth of medical officers in the army had been referred to and it was known what that had arisen from to a large extent—of which, he hoped the cause would hereafter be removed—the jealousy or distrust on the part of certain medical schools of the army as a career for a medical officer had been mitigated. It would readily be seen that there were very many cases in which a civilian medical officer must be employed and that it would be a waste of money, of power, and presumably of skill, to employ an army medical officer in every case when there was choice of civilian medical men at call in the immediate neighbourhood.

MONDAY, MARCH 20TH.

Venereal Disease in India.

Major RASCH asked the Secretary of State for India whether his attention had been called to the fact that the returns for 1897 show an increase of secondary syphilis of 8·5 in admission rate per 1000, of mortality of 0·17, of constantly sick of 1·18, as compared with the previous year, and that the number invalided home was 662 in 1897 as against 479 in 1896, being an increase of 183, or 38 per cent., of venereal disease; whether the information in the hands of the War Office shows that this increased virulence is due to the fact that patients do not undergo early treatment but are removed from cantonments to spread disease elsewhere; and if it was the practice to treat men suffering from constitutional syphilis in barracks instead of in hospital, which causes an apparent reduction in the number of admissions and renders the statistics misleading.—Lord GEORGE HAMILTON: The figures relating to venereal disease are correctly given by my honourable and gallant friend, but as regards admissions they are applicable to troops in cantonments only. The information available does not admit of any definite conclusion being drawn as to the cause of the increased virulence of secondary syphilis in 1897 as compared with 1896. Treatment of soldiers in barracks in certain stages of the disease has doubtless caused some reduction in the admission rate, but as it has been practised for some years it does not, I think, affect the comparison of one year with another.

Borax as a Food Preservative.

Mr. KILBRIDE asked the President of the Board of Agriculture whether he was aware that foreign bacon imported into this country had been found to contain 0·33 per cent. of boric acid and that the French authorities had refused to admit the importation of bacon thus preserved on the ground that it was injurious to health; whether he was aware that the law in Brazil prohibits the use of borax as a food preservative; and whether, in view of the action taken by other Governments, inquiry would be made into the use of borax in the interests of the public health.—Mr. CHAPLIN replied to the question, saying: I was not aware of the facts alleged in the first and second paragraphs of the question and I have not yet ascertained how far they are accurate. The Local Government Board has no direct information on the matter. I am considering the question of such an inquiry as that suggested by the honourable member and if it should appear to be necessary or desirable in the interests of the public health it will be my duty to direct it to be held.

TUESDAY, MARCH 21ST.

The Vaccination Question.

Mr. LOGAN asked the President of the Local Government Board if he proposed during the present session to so amend Section 2 of the Vaccination Act, 1898, as to prevent cases of an undue refusal by the magistrates to grant the certificates which were authorised by the Act.—Mr. CHAPLIN said that it had already been announced on behalf of the Government that they did not propose to introduce any legislation on this subject during the present session.

The London Water Question.

At this sitting of the House several private Bills dealing with the water-supply of London were discussed. Mr. JAMES STUART took exception to the Bill of the East London Company on the ground that in his opinion the River Lee is not a satisfactory source of supply. He moved the rejection of the measure but at the end of the debate he withdrew his motion and the Bill was read a second time. The chief debate, however, was upon the second reading of the Bill of the London County Council for bringing a supply of water to the metropolis from Wales. Mr. JAMES STUART argued that for its future needs London could not rely upon the Thames and the Lee but must seek elsewhere for a satisfactory supply, and he submitted that the case was so urgent that Parliament should not wait for the report of the Royal Commission.—Mr. WHITMORE moved as an amendment "that it is inexpedient that the Bill be read a second time before the Royal Commission on the London Water Supply has presented its report," and this amendment was supported by the Government, Mr. CHAPLIN saying that the Bill prejudged all the important questions referred to the Royal Commission. The amendment was carried by 206 to 130 votes.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.*

ANNINGSON, B., M.D. Cantab., M.R.C.S., has been re-appointed Medical Officer by the Royston Urban District Council.

ARKWRIGHT, J. A., M.D. Camb., B.C., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Halesowen Sanitary District of the Stourbridge Union.

BENNETT, P., M.B., B.Ch. Irel., has been appointed Medical Officer for the Attercliffe Sanitary District by the Sheffield Board of Guardians.

BURT, W. C., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer to the Workhouse of the Torrington Union.

COLES, A. C., M.D. Edin., C.M., B.Sc. (Public Health), has been appointed Medical Officer of Health by the Winton Urban District Council.

COLLINS, W. J., M.S. Lond., B.S., M.D., has been appointed a Member of the new Visiting Board for the Aylesbury Female Convict Prison.

DEARDEN, V. G. S., L.R.C.P. Edin., L.F.P.S. Glasg., has been appointed Medical Officer of the Carbrook Sanitary District by the Sheffield Board of Guardians.

DEMPSEY, M. J. P., M.D., B.Ch. Irel., M.R.C.P. Irel., has been appointed Physician to the Mater Misericordiæ Hospital, Dublin.

DUN, ROBERT CRAIG, M.B., C.M., B.Sc. Edin., M.R.C.S. Eng. L.R.C.P. Lond., has been appointed Honorary Surgeon to the Liverpool Infirmary for Children.

FERNIE, E., M.D. St. And., M.R.C.S., has been appointed Medical Officer by the Stone Urban District Council.

FULLER, JOSEPH, F.R.C.S. Edin., M.R.C.P. Irel., has been appointed Medical Officer of Health by the Long Ashton District Council.

FULLERTON, ROBERT, M.D., C.M. Edin., has been appointed Honorary Consulting Surgeon to the Greenock Infirmary.

HARVEY, G., L.R.C.P. Edin., L.R.C.S. Irel., has been re-appointed Medical Officer by the Matlock Bath Urban District Council.

LOXTON, W. A., F.R.C.S. Edin., L.R.C.P. Lond., M.R.C.S., has been re-appointed Honorary Medical Officer to the Birmingham and Midland Hospital for Skin and Urinary Diseases.

MACKENZIE, D. J., M.D. Aberd., C.M., has been re-appointed Medical Officer of Health by the Glossop Dale Rural District Council.

MEYTAM, WILFORD, L.S.A., has been appointed Medical Officer of the Darnall Sanitary District by the Sheffield Board of Guardians.

MUSSON, A. W., M.B., B.C. Camb., has been appointed Medical Officer to the Workhouse of the Clitheroe Union.

O'DONNELL, JOHN, M.B., B.Ch. Irel., has been appointed Assistant Physician to the Mater Misericordiæ Hospital, Dublin.

PHILLIPS, F. L., M.D. Brux., M.R.C.S., has been re-appointed Honorary Medical Officer to the Birmingham and Midland Hospital for Skin and Urinary Diseases.

PICKEN, J., M.B., C.M. Glasg., has been re-appointed Medical Officer by the Rawmarsh Urban District Council.

SMITH, G. T., M.R.C.S., has been re-appointed Honorary Medical Officer to the Birmingham and Midland Hospital for Skin and Urinary Diseases.

THOMPSON, J. H., L.R.C.P. Irel., L.R.C.S. Edin., has been re-appointed Medical Officer of Health by the Mytholmroyd Urban District Council.

THORNTON, Dr., has been appointed Medical Officer of the Ilfracombe Sanitary District of the Barnstable Union, vice A. A. Mackeith.

VINRACE, F. C., M.D., M.Ch. Irel., F.R.C.S. Eng., has been re-appointed Honorary Medical Officer to the Birmingham and Midland Hospital for Skin and Urinary Diseases.

WARDEN, A. A., M.D. Glasg., has been appointed Private Assistant to Dr. Doyen of Paris.

WEIGHTMAN, E. J., M.B., C.M. Edin., has been appointed Resident Medical Officer of the Walton Workhouse of the West Derby Union.

WHITFIELD, ARTHUR, M.D. Lond., M.R.C.P., has been appointed Assistant Physician in Charge of the Skin Department to King's College Hospital, London.

WORGER, T. H., M.R.C.S., has been re-appointed Medical Officer of Health by the Radstock Urban District Council.

Vacancies.

For further Information regarding each vacancy reference should be made to the advertisement (see Index).

BELGRAVE HOSPITAL FOR CHILDREN, 77 and 79, Gloucester-street, London, S.W.—House Surgeon for six months. Board and residence provided and a gratuity of £5 given.

CENTRAL LONDON OPHTHALMIC HOSPITAL, Gray's-inn-road, W.C.—House Surgeon. Residence, board, &c., in the hospital.

CHARING-CROSS HOSPITAL, London.—Bacteriologist to the Hospital and Lecturer on Bacteriology at the Medical School.

CHELTENHAM GENERAL HOSPITAL.—Assistant House Surgeon for two years, unmarried. Salary £40 per annum, with board and lodging.

COUNTY ASYLUM, Chester.—Junior Assistant Medical Officer, unmarried. Salary £120 per annum, rising yearly by £10 to £150, with board (no liquors), lodging, and washing. Also Medical Officer to act principally as Pathologist. Salary £150 per annum, with board (no liquors), lodging, and washing.

DENTAL HOSPITAL OF LONDON MEDICAL SCHOOL. Leicester-square.—Demonstrator in Dental Surgery. Honorarium of £25 per year given.

DERBY COUNTY ASYLUM, Derby.—Assistant Medical Officer. Salary £100, rising to £120, with board, lodging, and washing.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—Medical Officer for the casualty department for six months. Salary at the rate of £100 per annum.

EAST SUFFOLK AND IPSWICH HOSPITAL, Thoro'fare, Ipswich.—Second House Surgeon for one year. Salary £60 per annum, with board, lodging, and washing.

FISHERTON ASYLUM.—Assistant Medical Officer. Salary to commence at £100 per annum, with board, lodging, and washing. Applications to Dr. Finch, the Asylum, Salisbury.

HARRIS PARISH COUNCIL.—Medical Officer and Public Vaccinator for the Southern Division of Harris. Salary £90. Other emoluments. Applications to Mr. T. Wilson, Solicitor, Lochmaddy, Clerk.

HOSPITAL FOR DISEASES OF THE CHEST, City-road, London.—House Physician for six months. Salary at the rate of £40 per annum, with board, lodging, and washing.

HOSPITAL FOR WOMEN, Soho-square, London, W.—Assistant Physician.

HOSPITAL OF ST. FRANCIS, 145, New Kent-road, London.—Assistant Physician for Skin Department.

LEICESTER INFIRMARY.—Assistant House Surgeon for twelve months. Honorarium of £42 and board, residence at the Infirmary, and washing provided.

LONDON DISPENSARY, 27, Fournier-street, Spitalfields, E.—Medical Officer (non-resident). Salary £90 per annum. Applications to the Secretary, 5 and 6, Bishopsgate-street Without, E.C.

LONDON HOSPITAL MEDICAL COLLEGE, Mile-end, E.—Assistant Demonstrator of Anatomy. Salary £90 a year.

LONDON TEMPERANCE HOSPITAL, Hampstead-road, N.W.—Assistant Resident Medical Officer for six months. Residence in the hospital, board, and washing provided, and an honorarium of 5 guineas given conditionally.

NORTH RIDING ASYLUM, Clifton, York.—Junior Assistant Medical Officer. Salary £100, rising to £150, with board, lodging, washing, and attendance.

NORTH-WEST LONDON HOSPITAL, Kentish Town-road.—Honorary Anæsthetist for twelve months.

PADDINGTON-GREEN CHILDREN'S HOSPITAL, London.—House Surgeon for six months. Salary at the rate of £50 a year, with board and residence.

PARISH OF KIRKMABRECK.—Medical Officer. Salary £40 per annum, exclusive of medicines. Applications to Mr. J. Carson, Inspector of Poor, Creetown, N.B.

ROYAL EYE HOSPITAL or the ROYAL SOUTH LONDON OPHTHALMIC HOSPITAL, St. George's-circus, Southwark.—Assistant Surgeon. Honorary.

ROYAL HOSPITAL FOR CHILDREN AND WOMEN, Waterloo-bridge-road, London.—Surgeon to in-patients. Also Assistant Surgeon to In- and Out-patients.

ROYAL NATIONAL HOSPITAL FOR CONSUMPTION, Ventnor, Isle of Wight. Clinical Assistant (qualified or unqualified) for three or six months. Residence, board, and washing provided. Applications to the Resident Medical Officer.

ROXBURGH DISTRICT ASYLUM, Melrose.—Assistant Medical Officer. Salary £100 per annum, with furnished quarters, board, washing, and attendance.

ST. GEORGE'S HOSPITAL, London, S.W.—Physician or Surgeon for Diseases of the Skin.

ST. PANCRAS WORKHOUSE WITH INFIRMARY WING, London.—Assistant Medical Officer for two years. Salary £120 the first year and £135 for the second year. Residential allowances for a single man provided. Applications to the Clerk to the Guardians, Vestry Hall, St. Pancras-road, N.W.

STOCKPORT INFIRMARY.—Assistant House and Visiting Surgeon. Salary £70 per annum, with board, washing, and residence. Also Junior Assistant House Surgeon. Salary £2 per mensem, with board, washing, and residence.

STOKE-UPON-TRENT UNION.—Resident Medical Officer for the Workhouse. Salary, first year, £100, £110 for the second year, and £120 for the third year, with board, washing, and furnished apartments at the Hospital, subject to statutory deductions. Applications to the Clerk to the Guardians, Union Offices, Stoke-upon-Trent.

VICTORIA HOSPITAL, Folkestone.—House Surgeon. Salary £80 per annum, rising to £100, with board, residence, and washing.

WEST LONDON HOSPITAL, Hammersmith-road.—Assistant Physician.

WESTMINSTER HOSPITAL, Broad Sanctuary, S.W.—Resident Obstetric Assistant for six months. Board and residence in the Hospital provided.

Births, Marriages, and Deaths.

BIRTHS.

GEORGE.—On March 15th, at St. John's-wood-road, N.W., the wife of Isaac George, L.R.C.P. Lond., of a son.

HARPER.—On March 18th, at Rosary-gardens, South Kensington, S.W., the wife of James Harper, M.D., of a son.

HUMPHERY.—On Feb. 16th, at Wellgarth House, Armley, Leeds, the wife of Geoffrey Percy Humphery, M.B., C.M., of a daughter (prematurely).

ROGERS.—On March 18th, at The Red House, Cliffe-at-Hoo, Kent, the wife of Arthur B. Rogers, surgeon, of a daughter.

SAXBY.—On March 15th, at Halligarth, Baltasound, Shetland Isles, the wife of Thomas Edmonston Saxby, L.R.C.P., L.R.C.S.E., L.F.P.S.G., of a daughter.

WHITE.—On March 16th, at the White House, Coventry, the wife of F. Faulder White, F.R.C.S., of a daughter.

MARRIAGES.

GRIFFITHS—LEWNS.—On March 20th, at St. Gabriel's Church, Willesden-green, London, N.W., William Griffiths, B.Sc., M.D. Lond., of Grosvenor-gardens, Willesden-green, to Ada Carrie, third daughter of Charles Frederick Lewns, of Grosvenor-gardens, Willesden-green.

HOWDEN—SCOTT.—On March 15th, at Benwell Parish Church, Newcastle-on-Tyne, by the Very Rev. the Dean of Durham, D.D., assisted by the Rev. John Robertson, M.A., Robert Howden, M.A., M.B., Professor of Anatomy in the University of Durham, to Gertrude Mary, daughter of the late Alderman J. O. Scott, J.P., and Mrs. Scott, of The Cottage, Benwell, Newcastle-on-Tyne. At home, 24, Burdon-terrace, Newcastle-upon-Tyne, April 12th, 13th, and 14th.

DEATHS.

CLARKE.—On March 17th, at Horsman's Place, Dartford, Thomas Furze Clarke, M.R.C.S., aged 43 years.

JEE.—On March 17th, at his residence, Queniborough Hall, near Leicester, Deputy Inspector-General Jee, C.B., V.C., Honorary Surgeon to the Queen.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (27th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M., Ophthalmic 1.15 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), St. Mark's (9.30 A.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), Westminster (2 P.M.), London Throat (2 P.M.).

TUESDAY (28th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Royal Ear (3 P.M.).

WEDNESDAY (29th).—St. Bartholomew's (1.30 P.M.), University College, (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), Cancer (2 P.M.).

THURSDAY (30th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.).

FRIDAY (31st).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M. and 6 P.M.).

SATURDAY (1st).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), London Throat (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

MONDAY (27th).—MEDICAL SOCIETY OF LONDON.—8.30 P.M. Dr. R. Maguire: Death from Functional Nervous Disease.—Mr. H. L. Barnard: Certain Points in the Pathology of the Pericardium.

TUESDAY (28th).—ROYAL MEDICAL AND CHIRURGICAL SOCIETY (20, Hanover-square, W.).—8.30 P.M. Papers:—Mr. R. Harrison: Two Cases where Multiple Calculi were removed from large Narrow-necked Sacculi connected with the Male Urinary Bladder.—Dr. C. T. Williams and Dr. H. Horrocks: On the Treatment of Pulmonary Tuberculosis by Anti-tubercular Serum.

CHILDHOOD SOCIETY (Library of the Sanitary Institute, 72, Margaret-street, W.).—8 P.M. Rev. W. D. Morrison: Juvenile Delinquents.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (27th).—THE ROYAL INSTITUTE OF PUBLIC HEALTH (Rooms of the Royal Medical and Chirurgical Society, 20, Hanover-square, W.).—8.30 P.M. Mr. W. J. Dibdin: Sewage Disposal.

WEDNESDAY (29th).—EVELINA HOSPITAL (Southwark-bridge-road, S.E.).—4.30 P.M. Mr. W. Edmunds: Clinical Demonstration on Surgical Cases. (Post-Graduate Course).

THURSDAY (30th).—LONDON TEMPERANCE HOSPITAL.—2 P.M. Dr. S. Fenwick: Clinical and Pathological Demonstration to Senior Students.

Notes, Short Comments, and Answers to Correspondents.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index to Vol. II. of 1898, which was completed with the issue of Dec. 31st, and the Title-page to the Volume, were given in THE LANCET of Jan. 7th.

VOLUMES AND CASES.

VOLUMES for the second half of the year 1898 are now ready. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

Cases for binding the half-year's numbers are also ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 6*d.*

To be obtained on application to the Manager, accompanied by remittance.

THE STOCKPORT BRANCH OF THE ST. JOHN AMBULANCE ASSOCIATION.

THE Stockport Branch of the St. John Ambulance Association was founded in 1883 by Sir John Furley and its secretary is Mr. A. E. Ferns, a Stockport solicitor, who has undeniably given time and energy to the work and who has filled the post almost from the first. But that matters have not gone smoothly with the branch is sufficiently proved by the fact that at the present moment no medical men can be found to give lectures, so that all practical work is suspended. The crisis is apparently not an expression of the whole disease but only an isolated external symptom corresponding to the inflamed toe in a fit of the gout or the exanthem of a fever. Its immediate determining cause was a comparatively trivial fact but nevertheless one which from its nature was well adapted to serve as the starting-point of a conflict. Briefly it was as follows. There is an ambulance class for members of the Stockport police force and rather more than two years ago the Watch Committee discovered that the sum charged by the local centre for the examination of this class was higher than the sum paid by other corporations for the same work. Stockport paid £5 5*s.* while other towns paid sums varying from £1 16*s.* to £2 12*s.* Dr. Porter, the police surgeon of Stockport, was required in his capacity as police surgeon to obtain an explanation of this inequality, but a personal application made by him to Mr. Ferns met with an unfavourable reception. Mr. Ferns appears to have thought that there was some imputation on his integrity in being asked for an explanation. As a matter of fact no charge of financial irregularity has ever been brought against Mr. Ferns save that a balance-sheet relating to the pecuniary affairs of the branch was not issued by him until 1896. Communication was then made with the head office of the St. John Ambulance Association, from which it appeared that the apparent overcharge was not unwarrantable, for the scales of charges were not fixed, while it was stated to be a recognised custom in the St. John Ambulance Association that classes earning a financial surplus should contribute something to classes which were not self-supporting. (There is no harm in such an arrangement, but we should be glad to hear from Sir Herbert Perrott, if he has the information and is at liberty to give it, the names of the classes which are not self-supporting; while since the Watch Committee of Stockport took exception to this high fee the work has been done perfectly well for £1 14*s.* instead of £5 5*s.*) All the proceedings were matter of common knowledge in the town and the Stockport and District Medical Society then thought fit to take cognisance of them, and the second edition of the *Cheshire Daily Echo*, which paper is edited by the editor of the *Stockport Advertiser*, of Jan. 28th, 1899, contained a paragraph to the effect that this society had just held a large and representative special meeting at which resolutions were passed unanimously: (1) that in the opinion of the society the charges made by the local centre of the St. John Ambulance Association should not exceed those of the head office in London for exactly the same work; and (2) that the society should be represented upon the committee of the local centre by at least three of its members. This paragraph did not appear in later issues of the paper.

On Feb. 7th a meeting under the auspices of the Stockport centre of the St. John Ambulance Association for the distribution of class certificates and medallions was held in the Pendlebury Memorial Hall. A controversy of some kind was evidently expected. According to the report of the meeting published in the *Stockport Advertiser*

of Feb. 10th, before the distribution began Mr. Ferns took the first step by making a personal explanation, in which he said that it had been suggested that he, as the hon. secretary of the centre, had put monies taken for the fees of the classes into his own pocket. Dr. H. G. Smeeth, one of the secretaries of the Stockport Medical Society, said that no such insinuation had been made, while Mr. Ferns was asked by other gentlemen present to give his authority for the statement. Mr. Ferns did not give the name of his alleged traducer, or at least the fact is not published; but he said that "this centre started in 1883, and whoever heard any wrong word until the advent of Dr. Porter?" To this Dr. Porter replied: "There was discontent before ever I started and I have proof of it." Councillor Lievesley also added: "And Dr. Porter had nothing at all to do with it. The question arose in committee and he was not there." Eventually an interval was made for the distribution of the certificates, after which the discussion was resumed in the unfortunate manner upon which we have already commented unfavourably in THE LANCET. But whereas we blamed the medical men, having written our annotation from the account published in the *Stockport Advertiser*, we now find that the medical men were only defending themselves properly from misinterpretation. Dr. Smeeth now asked Mr. Ferns: "Was it a fact that the committee of the local centre had not met for something like a period of 12 years until last Thursday?" The reply was to the effect that the last meeting was in 1885, and it had been previously stated by Mr. Ferns that in addition to being secretary he had been treasurer since May, 1885. In the next place there was a discussion about the non-appearance of balance-sheets, followed by a passage of arms between Dr. Smeeth and the editor of the *Stockport Advertiser* relative to the suppression of resolutions forwarded for publication to the *Advertiser*, the resolutions referred to being those which we have already said were printed in the second edition of the *Cheshire Daily Echo* and in no other edition. At nearly 11 P.M. Dr. Porter read two letters, one of which he had written to Mr. Ferns in March, 1897, together with the latter gentleman's reply. These letters are printed in the *Cheshire County News* of Feb. 10th but not in the *Stockport Advertiser*, consequently in making our previous remarks on the meeting we knew nothing of them. The meeting then terminated uproariously, having throughout been a lamentable scene, to repeat the description given by the annotation in THE LANCET of Feb. 18th, p. 464. Now, the *Stockport Advertiser* of Feb. 10th has for its first leading article much eulogy of Mr. Ferns, whilst Dr. Smeeth is dealt with in a manner which can only be called scurrilous. The Stockport and District Medical Society rightly resented this treatment of their honorary secretary who only did his duty in inquiring why communications which he had been instructed to send were not inserted and passed a resolution to that effect. The next issue of the *Advertiser*, published on Feb. 17th, contained the following: "We have received a copy of a resolution passed by the Stockport and District Medical Society expressing continued confidence in the secretaries, and deprecating (what they consider) an unwarranted attack made upon Dr. Smeeth in the *Advertiser* of last week. We insert this resolution from a spirit of fairness, but refrain from further comment upon this subject, as we do not see that any useful purpose will be served by continuing the controversy."

As a result of the fact that the "spirit of fairness" of the *Stockport Advertiser* did not extend to uttering a word of regret for the editorial attack on Dr. Smeeth no medical man in Stockport will lecture for the St. John Ambulance Association. We invite the attention of Sir Herbert Perrott, the chief secretary of the St. John Ambulance Association, and Earl Egerton of Tatton, a local magnate taking an interest in the association, and, we believe, President of the Local Branch, to the *impasse* which has been brought about and for which the medical men are in no way responsible. Also Sir Herbert Perrott might like to say if it is a fact that no balance-sheet relating to the Stockport branch of the Association was issued between the years 1885 and 1896 by Mr. Ferns and if so whether this is (*a*) a usual or (*b*) a good custom as far as the Association's affairs are concerned. And, lastly, we must refer to the *Stockport Advertiser*. They print in their issue of Feb. 24th our annotation which we founded upon their own incorrect report of the meeting of the Stockport centre of the St. John Ambulance Association. We therefore take this opportunity of saying that the suppressions in their report put a wrong colour upon the meeting.

THE TOO EARLY USE OF THE MIDWIFERY FORCEPS.

To the Editors of THE LANCET.

SIRS,—I recently read an article in an American contemporary on the Use and Abuse of the Midwifery Forceps which greatly interested me. For the last few years I have noticed that the use of the forceps has been greatly on the increase. Now the question I wish to raise is whether, on the whole, the early use of the forceps is beneficial to the patient or not, and my impression is that if many of the instrumental cases were left to nature no interference would be required. That the forceps are a valuable aid to the obstetrician I am perfectly aware, to quote the words of the text-books, "in cases where delivery cannot be effected by the ordinary uterine pains"; but, on the other hand, that their rough, unskilful, and too early use does an irreparable injury in some cases will, I think, be admitted by all your readers; and I am sure there are very few in our profession who have not at some period seen the distressing cases of ruptured perineum which are sent into hospital for treatment and the history is generally that the woman was delivered with instruments. When I first entered the profession we were taught that "meddlesome midwifery" was very bad practice. During a period of six months as assistant in a busy S.E. practice in London, where we attended on an average over 20 cases per month, I only remember my principal using the forceps about a dozen times and myself twice. We all know that women during childbirth are very anxious to get things soon over and the question is asked by them continually, "Will I be long, doctor?" Now how easy it is in such a case for the medical attendant to suggest instrumental aid. Is he justified and honest in so doing? Has he the future good and safety of his patient at heart when, instead of letting Nature take her own course and to get away an hour earlier, he claps on forceps and has perhaps (if a primipara) a ruptured perineum to deal with, not to mention the unpleasant symptoms which are very likely to follow? In conclusion, I quote the following which appeared, I think, in the *British Medical Journal* of August 20th, 1898: "Dr. Lapthorn Smith of Montreal deprecated the too frequent use of the forceps. He impressed upon his students, and he implored those who heard him, never to put on forceps in a normal first labour unless it had been going on for 24 hours. If they would not do so they would not have to deplore so many fearful injuries." Dr. Sinclair also said "that midwifery had become too surgical and that the obstetricians were the providers of material for the gynæcologists." Trusting my letter may lead to further correspondence on the subject,

I am, Sirs, yours faithfully,

Cemmaes, Montgomeryshire. T. M. JONES-HUMPHREYS.

*** Since receiving this letter we have dealt with the subject in a leading article.—ED. L.

"TO A CERTAIN DOCTOR."

To the Editors of THE LANCET.

SIRS,—In THE LANCET of Feb. 4th (p. 326) you reproduced from the *Westminster Gazette*—with its due meed of praise—a poem under the above title by Mr. James Rhoades, the accomplished translator of the "Æneid" and author of the fine drama on "Timoleon." May I venture to submit to readers of THE LANCET an attempt to turn it into Latin elegiacs? I will ask you to let me transcribe the original (and, indeed, it can hardly be read too often) so as to enable your readers to judge how far I have succeeded in clothing it in the language of Ovid or (to be less ambitious) of Martial.

I am, Sirs, yours faithfully,

S. Patrick's Day, 1899. J. P. STEELE, B.A., M.D. Edin.

TO A CERTAIN DOCTOR.

"I'm only a doctor," is your cry,
"Concerned with the body's ills and maims,
But witless of art and poesy,
And lost to the spirit's finer aims."

Ay, only a hand by hundreds blest,
A heart that has ached for all, save self,
A brain racked ever to find them rest,
A soul whose riches are scorn of pelf.

In vain we argue; the theme is old;
Some men love horses, some singing birds;
But e'en if the poet's song ring gold,
Shall deeds that are gold weigh less than words?

You waived the pleasure and wooed the strife,
Of thorns, not roses, have made your bed;
You longed for the lovely side of life,
And fought with the terrible instead—

Longed sore, but never had time to give,
"Till now it is all too late," you say.
So be it. Why, man, the life you live
Is one long poem from day to day.

[*Idem Latine Redditum.*]

MEDICO CUIDAM.

"Sum medicus tantum qui sanem vulnera laesi
Corporis et morbos," care Machaon, ais;
"Quid mihi cum Musis cui surdo cantat Homerus,
Cui profert caeco daedala signa Myron?"

Sed tamen est pergrata manus tua millibus aegris
In quibus es totus nec memor ipse tui;
Dumque feras aliis requiem tibi saepe negatam,
Saepe bonus renuis quas merearis opes.

Cur remoramur in his? sunt argumenta vetusta;
Hunc sonipes, illum flens philomela juvat;
Aurea sint Sapphûs lyra et aurea verba, Machaon,
Aurea sunt per te facta magisque valent.

Gaudia praeteriens optasti tristia vitae,
Promptior in spinis quam recubare rosis;
Dilexti puer Aonidum nemus; arma Salutis
Castraque te retinent Hippocratea senem;

Otia et Aonidas defles nunc prorsus ademptas,
Inter opes Graiae mentis et artis inops.
Sed quorsum haec lacrimae? Divini carminis instar
Est quantum vitae cumque, Machaon, agis!

J. P. S.

"EUCALYPTUS GLOBULUS."

To the Editors of THE LANCET.

SIRS,—With reference to the letter printed in THE LANCET of March 4th from Mr. W. J. Brownscombe, Ph.C., of Elsternick, Victoria, we should like to point out that the "globulus" oils which he states did not accord with the Pharmacopœia were not genuine but oil from inferior species sold as "globulus." The fact that globulus is the only species specifically named in the new B.P. is very strong evidence that this species was taken as the standard; it is consequently superfluous for Mr. Brownscombe to suggest that oil from any other species will come nearer the B.P. tests than globulus does. In support of the contention that globulus was the oil taken as the standard for use medically we would ask your attention to the enclosed pamphlet recently issued by this company on the "Characteristics and Analysis of Eucalyptus Globulus Oil," contrasting the characteristics of Eucalyptus Globulus Oil with the B.P. tests, and which we venture to state comply in the most complete manner with the official description. We shall be glad to send a copy of the above-mentioned pamphlet to anyone applying for it, and beg to remain,

Yours truly,

THE TASMANIAN EUCALYPTUS COMPANY.
p.p. J. F. MACFARLANE, Manager.

Leadenhall-street, E.C., March 14th, 1899.

"WANTED A SUGGESTION FOR TREATMENT."

To the Editors of THE LANCET.

SIRS,—In reply to "Medicus" in THE LANCET of March 18th may I suggest that his case was one of teno-synovitis? I had a similar case in a piano player who had been under treatment by friction, iodine paint, and slinging for six months, and got steadily worse. The essential feature in the treatment is absolute rest *on a splint* for a period of sufficient length. In my case I fixed the forearm and hand, including the fingers, upon a flat splint and suspended the parts in a large sling. The painful area was frequently and liberally painted with a belladonna application and the fixation was continued for a fortnight, at the end of which time it was found that fairly free movement of the joints could be performed without pain or creaking. It was then taken off the splint and linimentum iodi was applied, the hand being kept in a sling and not used. By the end of another week it was practically well, but the patient was cautioned not to use it very much for a month or two. Arsenic and salicylate of soda were administered internally. If the early stage is very acute and not treated by rest adhesions may form which will require passive movement in the later stages after a period of rest. My patient was only about 17 years of age and was not so advanced as the case described by "Medicus," but the improvement was very rapid after the application of the splint.

I am, Sirs, yours faithfully,

March 17th, 1899. G. P.

"DOES ASPIRATION OF AIR THROUGH CHLOROFORM RENDER IT INERT AS AN ANÆSTHETIC?"

To the Editors of THE LANCET.

SIRS,—I have had the greatest satisfaction with the use of Krohne's inhaler and should now never use anything else. I always add fresh chloroform to the residual chloroform after an anæsthesia so as to bring up the volume with which one starts administration to a fluid ounce. If less be used the temperature of a small quantity rapidly runs down and the percentage of vapour with which the air is charged becomes smaller and smaller. When the atmosphere is damp the residual chloroform becomes opalescent from absorption of water, but this makes no difference to its anæsthetic influence. There is never any difficulty in giving enough chloroform with Krohne's inhaler, but the immense advantage is that almost all faults of omission in the administrator merely cause the patient to come to and never kill the patient, inasmuch as neglect merely stops the projection of air charged with chloroform vapour into the inspiratory current. By the Krohne's inhaler one gets with certainty an atmosphere charged with from 1 to 1·5 per cent. of chloroform vapour, and so soon as Krohne's method of using his inhaler is acquired there is no longer any anxiety or uncertainty about the induction of anæsthesia in the course of a few minutes. I am, Sirs, yours faithfully,

Manchester-square, W., March 16th, 1899. JAMES EDMUNDS.

AN INSTRUMENT FOR REMOVING LARYNGEAL TUMOURS.

IN the *Supplemento al Policlinico* of March 11th Professor Gaetano Geronzi of Rome publishes a description, with an illustration, of an instrument which he has devised for the removal of laryngeal tumours and for which he has proposed the name of "cucchiaio laringeo raschiatore secchietto" (laryngeal bucket-spoon and scraper). In the hope of avoiding some of the inconveniences of forceps, snares, and ordinary spoons, and taking a hint from De Rossi's olivary caustic-holder, which he says is not so well known as it deserves to be, he ordered from the firm of Invernizzi a steel instrument shaped like an almond kernel which is screwed at one end to an ordinary laryngeal stem. One side of this "almond" next the screw has a deep recess or open cavity, the lower border of which forms a cutting edge. Four of these "almonds" are provided slightly differing in shape, so that the recesses may be presented to the anterior commissure, to the inter-arytenoid region, and to each vocal cord. Their actual dimensions are not stated. The "almond" is easily passed through the rima glottidis; when it is drawn back the vocal cords clasp it firmly and the tumour projecting into the recess is cut off by the sharp lower border and drops into the recess ready for removal. Professor Geronzi says that there is no fear of the mucous membrane being injured by this instrument and that it is especially useful (1) for growths at the anterior commissure which always present difficulties to an operator; and (2) for growths which are too small to be seized with forceps or snare. Its action, he says, is different from that of the fenestrated tubes of O'Dwyer or Lichtwitz.

THE REICHARDT FUND.

Dr. Goodhart and Dr. Savage acknowledge the following further subscriptions:—F. Neel Gaudin, £2 2*s.*; O. W. Barry, £1 1*s.*

Nestor asks for advice both as to treatment and prognosis on the following case. A young professional man of considerable attainments has for the last three years suffered from the following mental symptoms. His mind fixes itself upon matters of the most trifling importance which become to him a source of worry utterly out of proportion to the cause. Although perfectly aware of this he is unable to control these morbid worries, be they professional, social, or otherwise. A strange desire to probe the most simple and self-evident facts thus making matters which are quite plain to others a source of problematical questioning to himself. Any subject, however small, fixes itself upon his mind to the exclusion of others for a few days and then disappears to be replaced by a fresh one. The patient is 29 years of age; he is of a somewhat emotional temperament, generally regarded as most entertaining, and goes in for sports of all kinds. There is no loss of body weight; the family history is good; there is slight impairment of memory. He has never given up work, which he generally finds to agree with him. The treatment adopted has been the use of bromides, iron, arsenic, and quinine. A short sea voyage did more harm than good. Any brother practitioner who could name any reasonable treatment, likely to do good, would confer a boon upon the patient.

Dr. Frederic Vicars (Ovington-gardens, S.W.) asks for information with regard to a place in England where a gentleman of small means can be treated by open-air methods for consumption

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M.D.—The Act (the Medical Act, 1859) says that a person "not a British subject who shall have obtained from any foreign university a degree or diploma of Doctor in Medicine and who shall have passed the regular examinations entitling him to practise medicine in his own country" shall be allowed to act as "resident physician or medical officer of any hospital established exclusively for the relief of foreigners in sickness, provided always that such person is engaged in no medical practice except as such resident or physician or medical officer."

Mr. Herbert Pratt.—We do not prescribe for patients or recommend practitioners.

Mr. H. Welch.—The book is, we understand, of no pecuniary value.

Sanitas.—We do not know.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Mar. 23rd, 1899.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain-fall.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
Mar. 17	30·39	S.W.	...	48	46	38	42	43	Overcast
,, 18	30·12	E.	...	64	47	35	42	43	Overcast
,, 19	30·09	N.E.	...	75	43	31	32	33	Cloudy
,, 20	29·76	N.	...	76	42	29	30	33	Cloudy
,, 21	29·80	S.W.	...	68	40	27	Fzn.	29	Hazy
,, 22	29·66	W.	...	75	43	27	Fzn.	30	Hazy
,, 23	29·77	N.W.	...	54	35	26	Fzn.	30	Overcast

During the week marked copies of the following newspapers have been received: *Nottingham Daily Express, Glasgow Herald, Western Morning News, Sheffield Daily Telegraph, Newcastle Daily Chronicle, Manchester Mail, Barnsley Chronicle, Daily Mail, Times of India, Pioneer Mail, Citizen, Scotsman, Architect, Yorkshire Post Brighton Gazette, City Press, Liverpool Daily Post, Sanitary Record, Leeds Mercury, Cheltenham Examiner, Sunderland Echo, Oswestry Advertiser, Dundee Advertiser, Birmingham Post, Scarborough Post, Tunbridge Wells Advertiser, Isle of Man Times, Indian Daily News, Sunderland Morning Mail, Fife Herald, West Sussex Gazette, Mining Journal, English and American Gazette, Hertfordshire Mercury, Reading Mercury, Municipal Journal, Surrey Advertiser, Leith Herald, Local Government Journal, Sydney Morning Herald, Newspaper Owner, Manx Sun, Oundle Guardian, Scientific American, Warwick Times, Midlothian Journal, Haddington Courier, Freeman's Exmouth Journal, Derby Express, Rotherham Advertiser, Oban Times, Weekly Free Press and Aberdeen Herald, Windsor Chronicle, Chelsea Mail, Cornish Times, Manchester Guardian, Builder, Bristol Mercury, Grimsby Times, &c.*

Communications, Letters, &c., have been received from—

A.—Mr. A. Allison, Berkhampstead; Mr. Charles Adams, Keyhaven; Messrs. Arnold and Sons, Lond.; Messrs. Armour and Co., Lond.

B.—Mr. Charles Bolton, Lond.; Messrs. C. Barker and Sons, Lond.; Mr. E. Bromet, Redhill; Messrs. Bentley and Co., Lond.; Sir Hugh Beevor, Lond.; Messrs. P. Blakiston and Son, Philadelphia; Mr. W. G. Burcombe, Lincoln; Dr. Lucas Benham, Shanklin, Dr. Bentley, Stockport.

C.—Mr. J. A. Colecliough, Hindhead; Christy Saddle Co., Lond.; Messrs. Carnrick and Co., Lond.; Messrs. Crossley, Moir, and Co., Lond.; Messrs. Cuxson, Gerrard, and Co., Oldbury; College of Preceptors, Lond., Secretary of; Mr. P. R. Cresswell, Dowlais; Mr. E. Cole, Lond.; Mr. J. S. Collier, Lond.; Dr. A. E. Cooper, Lond.; Civil and Mechanical Engineers' Society, Lond.; Dr. R. W. Carter, Weymouth; Mr. T. J. Cooke, Harrogate; Messrs. H. and W. Cox, Leicester; Cortland Wagon Co., Lond.; Chester County Asylum, Clerk of; Cheltenham General Hospital, Hon. Secretary of; Dr. C. Clapham, Rotherham; Mr. J. Clifton, Sowerby.

D.—Dr. Morgan Dockrell, Lond.; Messrs. Davy, Hill, and Son, Lond.; Dr. Dulgan, Oxford; Mr. Shaik Dawood, Kisaliza, Uganda; Mr. T. Dixon, Lond.; *Daily Chronicle*, Editor of; Dr. E.; Mr. H. A. Davies, Bristol; Messrs. Douglas and Mason, Edinburgh.

E.—East Suffolk and Ipswich Hospital, Secretary of; E. M. C.

F.—Mr. W. C. Finch, Salisbury; Messrs. Ferris and Co., Lond.; Fromms Extract Co., Lond.; F. E.

G.—Dr. W. M. D. Gallie, Lond.; Messrs. Graham and Shepherd, Sunderland; Messrs. J. Gabor and Co., Brighton; Glasgow Hospital for Skin Diseases, Secretary of; Dr. W. Gray, West Hartlepool; Mr. Hastings Gilford, Reading; Mr. G. Greenwood, Enfield; *Gil Blas*, Paris, Editor of; General Medical Council, Registrar of.

H.—Dr. David Hunter, Newcastle; Dr. G. Herschell, Lond.; Dr. F. Hawkins, Reading.

I.—Dr. R. N. Ingle, Bedford; Messrs. Idris and Co., Lond.

J.—Mr. Raymond Johnson, Lond.

K.—Mr. L. O. S. Kelly, Dublin; Dr. G. Kerner, Lond.; Messrs. R. A. Knight and Co., Lond.

L.—Mr. S. Lewis, Lond.

M.—Mr. F. Malcolm-Smith, Lond.; Mr. Mouillot, Lond.; Messrs. Masson et Cie, Paris; Mr. Meredith, Coventry; Messrs. J. Maythorn and Son, Biggleswade; Medicus, Sawston; Mr. N. H. Martin, Low Fell; Maltine Manufacturing Co., Lond.; Might Directory Co, Toronto, Canada; Dr. Manknell, Bradford; Medical Publishing Co., Lond.; Mr. T. McClean, Lond.; Matchless Gas Lighting Syndicate; Dr. A. Miles, Edinburgh; Mr. A. E. Mayland, Glasgow; Dr. F. V. Milward, Redditch; Mr. G. Müller, Lond.; Mrs. H. S. Maxin, Lond.; Dr. J. Mooney, Manchester; Mr. C. T. Marshall, Lond.; Messrs. McKenna and Co., Lond.

N.—Dr. H. Nicholls, Longton; National Press Cuttings Bureau, Lond., Secretary of; Messrs. Neill and Holland, Bradford; Newellite Glass Tile Co., Lond.

P.—Mr. J. B. Pennington, Lond.; Mr. Frederick Page, Newcastle-on-Tyne; Messrs. Parke, Davis, and Co., Lond.; Mr. W. Parker, Glasgow; P. N. G.; Mr. Y. J. Pentland, Edinburgh; Mr. H. Pugh, Lond.; Poplar Hospital for Accidents, Lond., Secretary of; Mons. G. Popp, Paris.

Q.—Querist, Boulogne-sur-Mer.

R.—Mr. E. J. Reid, Lond.; Rebman Publishing Co., Lond.; Messrs. Roberts and Co., Lond.; Messrs. J. Richardson and Co., Leicester; Roxburgh District Asylum, Melrose, House Steward of.

S.—Dr. P. Horton Smith, Lond.; School of Medicine, Royal Colleges of Edinburgh, Secretary of; Society of Apothecaries, Lond.; Mr. G. Stoker, Lond.; Mr. H. Schloesser, Lond.; Dr. B. Squire, Lond.; Stockport Infirmary, Secretary of; Mr. C. Sandfield, Folkestone; Mr. T. Shennan, Edinburgh; Dr. Joseph Smyth; Naas; Mr. N. H. E. Sukhia, Bombay; Mr. W. H. Smith and Son, Manchester; Messrs. Street and Co., Lond.; Messrs. Smith, Elder, and Co., Lond.; Stoke-on-Trent Union, Clerk of; Mr. J. Stennett, Newark; Dr. A. Scurfield, Sunderland; Messrs. Spiers and Pond, Lond.

T.—Dr. F. Turck, Chicago; Sir Henry Thompson, Lond.; Mr. J. Thin, Edinburgh; Dr. M. Takayasu, Osaka, Japan.

U.—Usual Custom.

V.—Mr. F. Vicars, Lond.; Victoria Hospital, Folkestone, Secretary of; Victoria Carriage Works, Lond.

W.—Dr. William Wallace, Wisbech; Mr. C. Wort, Lond.; Dr. N. C. Ward, Glasgow; Mrs. Warrilow, Alton; Mr. C. H. Whiteford, Plymouth; Mr. L. D. Warner, Brantford, Ontario; Dr. James Wallace, Greenock; Mr. A. L. Woodward, Lond.; Messrs. J. Wright and Co., Bristol; Wills, Ltd., Lond.; Mr. J. R. Woolcock, Abberley; Dr. Washbourn, Lond.

X.—X. Y. Z.

Y.—Yorkshire College, Leeds, Registrar of.

Z.—Messrs. A. and M. Zimmerman, Lond.

Letters, each with enclosure, are also acknowledged from—

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